Enclosure 8
Letter, Felton to Jackson
Dated: July 27, 1998

FILE COPY

LOCKHEED MARTIN

LOCKHEED MARTIN ENERGY SYSTEMS

POST OFFICE BOX 2009
OAK RIDGE, TENNESSEE 37831

January 16, 1998

Mr. R. J. Spence
Y-12 Site Manager
Department of Energy, Oak Ridge Operations
Post Office Box 2001
Oak Ridge, Tennessee 37831

Dear Mr. Spence:

Contract DE-AC05-84OR21400, Plan of Action (POA) for the Enriched Uranium Operations (EUO) Restart - 97-3011

Enclosed for your concurrence and approval by Mr. J. C. Hall, Manager, Oak Ridge Operations, is Revision 2 of Y/MA-7316, *Operational Readiness Review Plan of Action for Enriched Uranium Operations Restart Phase A*.

As we discussed, this revision divides the Operational Readiness Review (ORR) into two reviews. The overall scope of the ORR has not changed from Revision 1. The first ORR (Phase A1) will cover the metal working (casting, machining, and rolling and forming) operations and some supporting accountability processes, and the second ORR (Phase A2) will cover the remaining accountability processes. A list of processes to be covered in each ORR has been added to this revision as Table 1. All administrative and safety management programs, e.g., the emergency management program, will be reviewed during Phase A1.

Table 1 in the revised POA does not include the Ajax Salt Bath and Abar Vacuum Furnace processes that were listed in Table 1 of the Y/MA-7293, *Enriched Uranium Operations (EUO) Restart Plan*, as Phase A processes. In the next Scope Review Board meeting, I will recommend that the Ajax Salt Bath process be deleted and the Abar Furnace process be moved to Phase B.

Enclosure 1 to Letter
Felton to Spence
Dated: January 16, 1998

Outline of Changes for Revision 2

Page	Sect	Para.	Change
vii	Forward	--	Added Forward explaining purpose of revision.
ix	Ex. Sum.	3-6	Revised to reflect split of Phase A into Phase A1 and A2.
1	2.1	2	Added paragraph to explain Phase A1 vs. A2 scope.
5	2.2.1	1-2	Deleted transition plan and revised text statements. The organization has been finalized and resumption functions transferred such that the transition plan is not needed.
6	Figure 3		Replaced Figure 3 to reflect new organization.
10	5.4	1	Revised to reflect split and added paragraph to summarize scope of Phases A1 and A2.
11	6	1	Replaced with new paragraph summarizing Phases A1 and A2 scopes. Inserted Table 1 to list processes in each phase.
11	6	3	Added paragraph to summarize approach to programmatic issues for Phases A1 and A2.
11	7	1	Clarified that all prerequisites apply for Phase A1 and that Phase A1 ORR is a Phase A2 prerequisite.
13	8	2	Replaced anticipated dates with current plans for Phases A1 and A2.
17	A1	1	Revised parenthetical statement to be consistent with footnote on Table A1.
		2	Added paragraph pointing to Table 1 for the Phases A1 and A2 scopes.
31	CO-7	1	Added clarification to second bullet to correct MIA finding.
35	Table A3	--	Recategorized machinists and machine cleaners as "operators" and machinist supervisors as "supervisors."
45	CO-34		Deleted parenthetical reference to OSR submittal. The OSR has been approved.
49	PR-12		Revised to delete transition plan and commit to startup plan. The transition plan is no longer needed because organizational issues have been finalized and included in the POA revision. The startup plan will address CO-28 issues.
49	PR-16		Added new prerequisite for Phase A2.

Enclosure 2 to Letter
Felton to Spence
Dated: January 16, 1998

Y-12

Y/MA-7316
Revision 2

OAK RIDGE Y-12 PLANT

LOCKHEED MARTIN

Operational Readiness Review
Plan of Action
for
Enriched Uranium Operations
Restart Phase A

January 1998

Compiled by
R. D. Sabin

Oak Ridge Y-12 Plant
Oak Ridge Tennessee
operated by
LOCKHEED MARTIN ENERGY SYSTEMS, Inc.
for the
U.S DEPARTMENT OF ENERGY

Y/MA-7316
Revision 2

Operational Readiness Review
Plan of Action
for
Enriched Uranium Operations
Restart Phase A

Concur:

N. C. Jessen
Facility Manager, Enriched Uranium Operations

1/16/98
Date

Concur:

C. J. Ihrig
Deputy for Transition and Integration

1/16/98
Date

Concur:

L. A. Felton
Vice President for Restart Operations

1/16/98
Date

Concur:

R. J. Spence
Manager, DOE Y-12 Site Office

1/16/98
Date

Approve:

J. C. Hall
Manager, Oak Ridge Operations

1/16/98
Date

This page intentionally left blank

TABLE OF CONTENTS

This page intentionally left blank

FORWARD TO REVISION 2

Lockheed Martin Energy Systems (LMES) and the Department of Energy Oak Ridge Operations office (DOE-ORO) have agreed to a re-structuring of the Enriched Uranium Operations (EUO) Phase A Operational Readiness Review (ORR) format. The basic change is that the ORR will be split into two reviews. The first ORR (Phase A1) will cover the metal working (casting, machining, and rolling and forming) operations plus some supporting accountability processes, and the second ORR (Phase A2) will cover the remaining accountability processes. The split is made to ensure that the metal working operations are available to support DOE's defense programs. The accountability operations will follow in time to support the waste streams from the metal working operations. All administrative and safety management programs (e.g., emergency management program) will be reviewed during Phase A1.

This revision defines the scope of the Phase A1 and Phase A2 ORRs. It does not revise the overall scope of the Phase A ORR as described in revision 1. Changes made in this revision have been consolidated and marked to make them clear.

This page intentionally left blank

EXECUTIVE SUMMARY

This document has been prepared to comply with the requirements of Department of Energy (DOE) Order 425.1, dated September 29, 1995.

In September 1994, the Y-12 Plant entered a general stand down of operations to correct significant deficiencies regarding compliance with criticality safety procedures. Resumption of plant operations has occurred in steps, with Enriched Uranium Operations (EUO) facilities being the last to be restarted.

The EUO restart is being performed in two phases. The first phase (A) restarts facilities for the batch accountability and casting functions of the Building 9212 operations area and the machining and the rolling and forming functions of the Building 9215 operations area. To support DOE's defense programs, Phase A has been further subdivided into Phase A1 (metal working plus some accountability processes) and Phase A2 (remaining accountability processes). The second phase (B) restarts facilities for the inventory, chemical recovery/purification, and metal production functions in the Building 9212 operations areas.

This Plan of Action (POA) defines the proposed breadth, prerequisites, schedule, team leader, and related information for the Phase A1 and Phase A2 ORRs.

A Lockheed Martin Energy Systems (LMES) Operational Readiness Review (ORR) will verify that the processes covered by Phase A1 and Phase A2 meet applicable requirements defined in DOE Order 425.1, "Startup and Restart of Nuclear Facilities," and DOE-STD-3006-95, "Planning and Conduct of Operational Readiness Reviews (ORR)." Appendix 1 of DOE-STD-3006-95 will provide the consistent graded approach that will be used in the ORR. Grading will include the breadth of review based on the applicability of core objectives; and depth of review based on the importance to safety, hazards, facility characteristics, relevance to events leading to the stand down, and evidence from other assessments.

Each LMES ORR will be followed by a DOE ORR which will provide the basis for DOE's approval to resume operations. The Manager, Oak Ridge Operations Office will be the restart authority for Phase A1 and Phase A2.

This page intentionally left blank

1. NAMES OF FACILITIES BEING RESTARTED

The facilities being restarted are the Buildings 9212 and 9215 operations areas of the EUO Organization at the DOE's Y-12 Site in Oak Ridge, Tennessee.

2. DESCRIPTION OF FACILITIES

The EUO Organization primarily supports DOE defense programs. The facilities involved in this restart will support defense programs. The facilities will process enriched uranium from dismantled nuclear weapons into a form for long-term storage. These facilities also support nondefense programs by producing or recovering enriched uranium from research reactor fuel, recovering enriched uranium from salvage materials to support accountability, and providing purified metal to nonweapons customers. Other missions are identified on an as-needed basis by the DOE and other customers.

2.1 Facilities

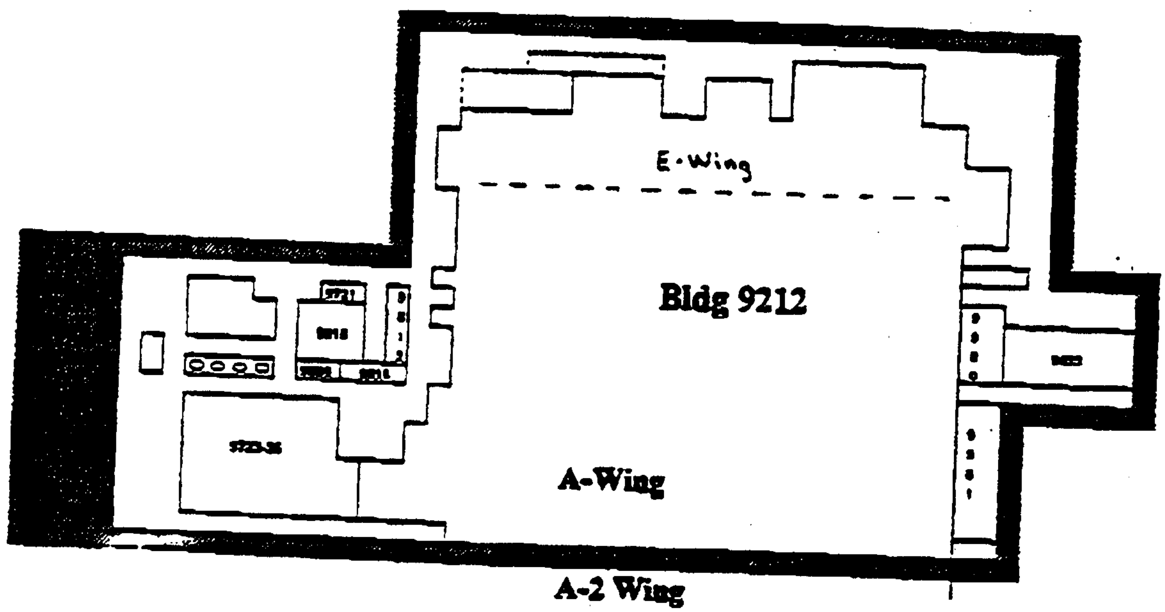
The restart will involve facilities in the Buildings 9212 and 9215 operations areas of EUO. The Building 9212 operations area [including Buildings 9212 (except A and A2 Wings), 9423, 9980, 9812, 9815, 9818, 9981, 9999, and support facilities] contains the accountability and enriched uranium casting processes. The Building 9215 operations area (including Buildings 9215 M- and O-Wings only, 9998, and support facilities) contains the enriched uranium rolling and forming and machining operations. The Building 9212 operations area is shown in Figure 1 and the 9215 area is shown in Figure 2. These figures are extracted from the Nuclear Operations Conduct of Operations Manual (Reference 1).

The metal working processes being restarted in Phase A1 are in E-wing of building 9212 (casting), M-wing of Building 9215 (machining), and O-wing of Building 9215 (rolling and forming). The Phase A1 accountability processes are in the Building 9212 complex and the Building 9818 complex. These processes are supported by the radiography and density inspections performed in Building 9981 and dimensional inspections performed in Building 9998.

The accountability processes being restarted in Phase A2 are in the Building 9212 complex (B1-wing, C1-wing, D1-wing, headhouse, special processing, and the Building 9818 complex).

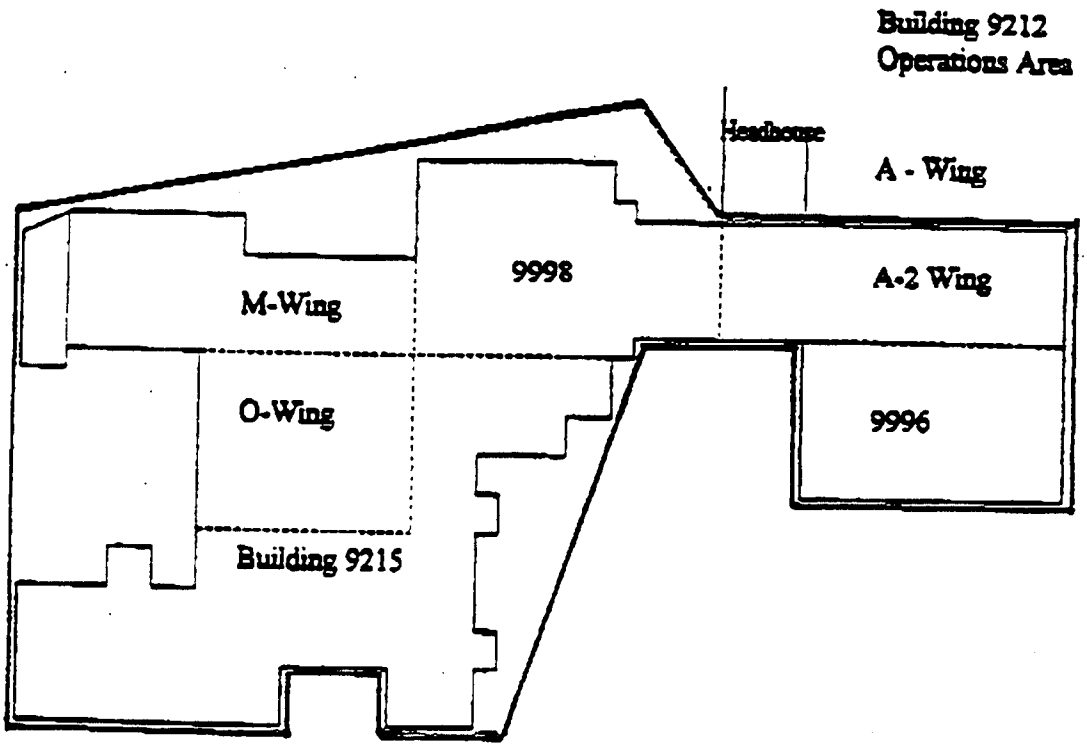
2.1.1 Building 9212 Operations Area

The enriched uranium casting operation employs vacuum-induction casting furnaces, metal shearing and breaking, light machining, and casting by-product handling. This facility is located in Building 9212 E-Wing.



Phase A operations involve buildings 9212 (except A and A2 wings), 9423, 9980, 9981, 9818, 9815, 9812, and 9999.

Figure 1. Operations area for Building 9212 Complex



Phase A operations involve building 9215 M- and O-wings and parts of building 9998. (Other areas are not included in restart.)

Figure 2. Operations area for the Building 9215 Complex

The enriched uranium accountability operations are performed by bulk reduction, dissolution, and evaporation. Enriched uranium is placed in can and safe bottle arrays for in-process storage. This equipment and storage are located in the Headhouse and B-1, C-1, D-, D-1 and E- Wings of Building 9212. Operation of the dissolution process is supported by the chemical makeup, organic treatment, and nitric acid and aluminum nitrate recycle operations in the Building 9818 complex located west of Building 9212.

Ancillary operations (such as exhaust fans) are located in C-Wing, adjacent buildings, or on the roof of Building 9212.

Uranium oxides are produced from a uranyl nitrate solution using dissolution, precipitation, furnaces, and particle-sizing operations in Rooms 1021, 1022, and 1010 in Building 9212. Shipping and receiving are from Room 1004.

Radiography and density inspections are performed in Building 9981.

2.1.2 Building 9215 Operations Area

The machining operations of enriched uranium are performed in M-Wing of Building 9215. These operations are performed on the numerically-controlled/manually-operated lathes, mills, borers, and grinders. Significant support equipment for these operations includes chuck vacuums and machining coolant systems. The enriched uranium chips generated by the machining operations are transported to Building 9212, E-Wing, for further processing or storage. This chip processing includes: cleaning, drying, and briquetting of the chips prior to recasting.

Enriched uranium rolling and forming are performed in O-Wing of Building 9215. Equipment and operations necessary to produce a wrought part include: molten salt baths, a rolling mill, water rinse systems, mechanical leveling and shearing, heat treatment ovens, hydroform, and several material conveyance devices.

Dimensional inspections are performed in Building 9998, which is connected to Building 9215 M-Wing.

2.1.3 Operations Excluded from ORR

EUO includes operations and areas that are not within the scope of the Phase A ORR or in Phase B. Building 9206 operations area facilities are not being restarted in Phase A or Phase B. Also, the Building 9215 enriched uranium transportation operation (EUTO), storage, and special nuclear materials

transfer facilities previously resumed operation after readiness assessments for other Y-12 Nuclear Operations divisions.

2.2 Organization

2.2.1 EUO

The EUO Organization is shown in Figure 3. The basic organizational units are the operations areas, which are defined in the "Nuclear Operations Conduct of Operations Manual" (Reference 1). Phase A of restart includes parts of both the Building 9212 operations area and the Building 9215 operations area. The Building 9206 operations area is not included in the restart and is not within the ORR scope.

Each operations area is headed by an operations manager who reports directly to the EUO facility manager. The operations manager is responsible for worker and public safety and health and production. Support is provided by a temporary EUO Resumption Organization (not shown) that has been established to provide support throughout Phase A and Phase B.

2.2.2 Tenant and Support Organizations

The EUO Organization is the landlord for Buildings 9212 and 9215 operations areas and is responsible for overall facility safety. Responsibilities and interfaces between EUO and each tenant are defined in plant procedures and landlord/tenant agreements. Two tenants, the Product Certification Organization and the Analytical Services Organization, operate processes that will be restarted during Phase A. For purposes of the ORR, these processes (and their associated procedures and training and qualification) will be subject to the same core objectives (COs) and considerations as processes directly operated by EUO.

The ORR scope will extend into other Y-12 Plant organizations only as far as their services actively support processes and activities associated with restart (Section 5). These services are defined in procedures and Memorandums of Understanding or landlord/tenant agreements with each support organization (see Y/MA-7296, "Index of Enriched Uranium Operations Memorandums of Understanding," Reference 2).

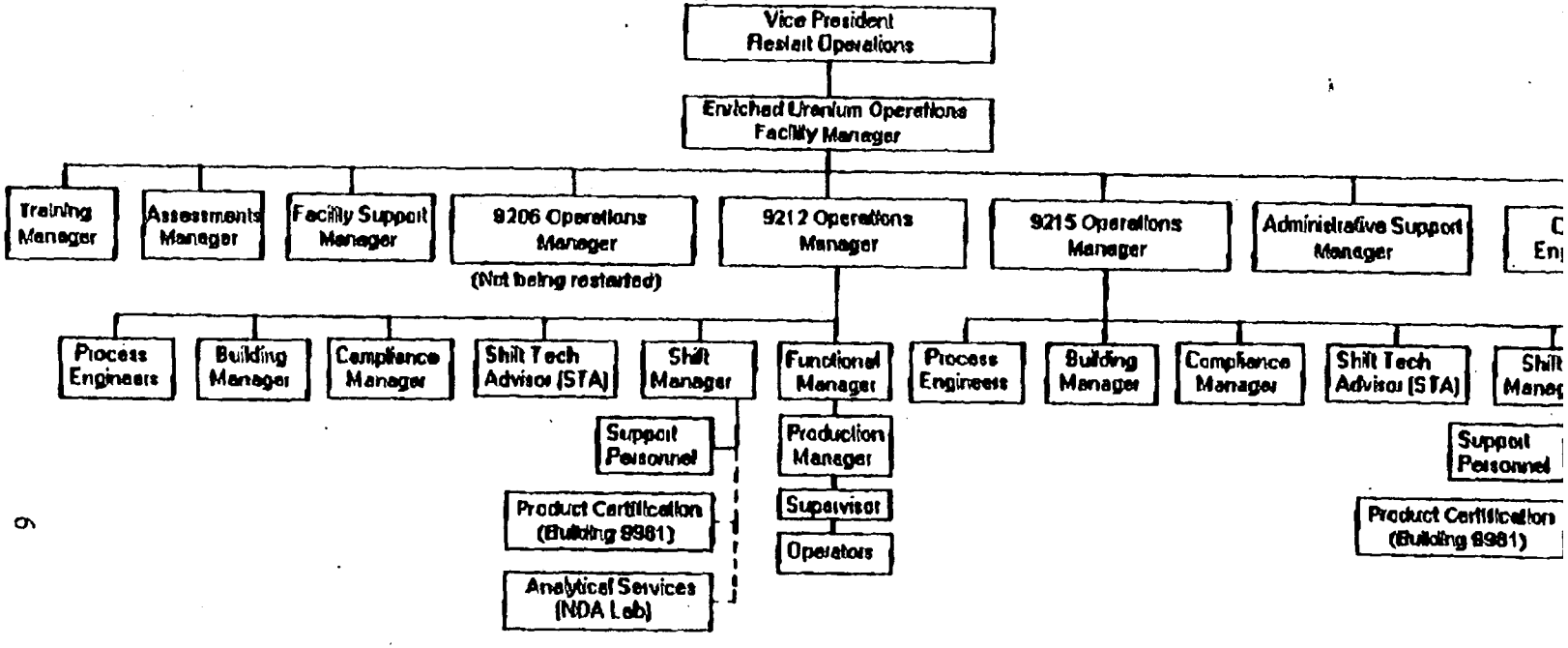


Figure 3
Enriched Uranium Operations Organization

Support services are provided by the following Y-12 Plant organizations:

- Analytical Services
- Central Engineering
- Depleted Uranium Operations
- Development
- Facilities Management
- Safety and Health
- Quality Services
- Site Management Services
- Product Certification
- Protective Services (including Fire Protection)
- Waste Management
- LMES Environmental Compliance
- Nuclear Criticality Safety
- Nuclear Facility Safety
- Radiological Controls

3. IDENTIFICATION OF RESPONSIBLE CONTRACTOR

The contractor who will certify readiness to operate is LMES.

4. DESIGNATION OF ACTION AS RESTART

The proposed activity is the restart of an existing nonreactor nuclear facility after a contractor-directed stand down that exceeded one year.

5. RESTART DISCUSSION

Most EUO Organization operations have been inactive since a 1994 plant stand down. Preparations for restart formally began in October 1996. The following sections summarize the stand down, facilities hazard categories, changes during stand down, and ORR plans.

5.1 Background

During a September 1994 review of containerized storage operations and applicable Criticality Safety Approvals (CSAs) in another Y-12 Plant organization, operations personnel were observed violating administrative safety controls associated with material storage arrays. Upon observation of the violations, the area was not immediately placed under administrative control and the Nuclear Criticality Safety

Department or the Plant Shift Superintendent were not notified as required by plant training and procedures. An investigation of the incident, including information from CSA walkdowns and from the Defense Nuclear Facilities Safety Board Recommendation 94-4, indicated that the root cause of this incident was a lack of rigor in Conduct of Operations that permitted less-than-strict compliance with procedures. A contributing factor was the lack of training on CSAs.

As a result of these violations, Y-12 management imposed a general stand down on most activities, including those in EUO. The stand down was imposed to enable improvements in organizational performance and management of safety in daily operations.

Resumption of Y-12 operations has been in steps, with simpler operations being restarted first. Due to its complexity and hazard category, EUO remained in stand down until resources were made available and restart experience was gained. During the stand down, EUO continued to perform some operations with DOE approval. This included "continuing operations" of selected systems to maintain facility and personnel safety and DOE-approved special packages to meet unique customer needs (see Y/AD-623, "Plan for Continuing and Resuming Operations," Reference 3).

The Process-Based Restart (PBR) is being conducted in direct support of national defense priorities. The restart approach was based on successful programs at Y-12 and other DOE sites. The processes selected for restart were identified by a team of experienced EUO and DOE engineers and managers, as those required to support defense priorities. Programmatic improvements that are not process-specific were also developed by subject matter experts to resolve known weaknesses.

5.2 Hazard Categories

Facilities in the Buildings 9212 and 9215 operation areas have been classified as Hazard Category 2 (see References 4 and 5).

5.3 Process Changes

Changes to process equipment or operation have not been required as a result of events leading to the stand down. However, process changes have been made to upgrade or consolidate facilities or to accommodate the phased return of processes to operation. Some of these changes were completed, but not ran prior to the stand down. Notable process changes are listed below. These changes have been incorporated into the authorization bases (References 4, 5, 7, and 8).

For the accountability function:

- The wet vacuum process has added monitoring and control points to enhance control.
- The requirement for gamma monitors in the high-capacity evaporator process was removed in favor of safe-geometry tanks. The process operation has not changed significantly.
- The organic-handling process has been relocated to Building 9815 from Building 9206. The equipment and process operations have not changed significantly.
- The tray dissolver and scrubber process will be used to concentrate solutions prior to precipitation. The equipment and process operations have not changed significantly.
- The precipitator process will be used to solidify less pure materials. This is an interim use to produce solid material for storage until Phase B processes are restarted. The equipment and process operations have not changed significantly.
- The muffle furnace process has eliminated use of oxygen.

For the casting function:

- The 9212 fire protection process has eliminated the use of Halon. Non-flammable filters have replaced flammable bags in the E-Wing exhaust.

For the machining function:

- The machine coolant process tanks, that used fixed boron neutron poisons, were replaced with safe-geometry tanks. The process operation has not changed significantly.
- Radiography equipment has been consolidated in Building 9981 from Building 9980. The equipment and process operations have not changed significantly.

For the rolling and forming function:

- The forming, rolling mill, gantry cell, high-pressure rinse, roller leveler, square shear, and sheet salt bath process equipment was replaced with new equipment. The new equipment provides remote handling and reduces handling of materials.
- A convection oven replaces the previous equipment that used oil and lead baths.

Other facility modifications installed during the stand down have generally been limited-scope improvements to upgrade performance or to bring individual processes into compliance with requirements as specified in the safety basis documentation. A listing of modifications will be available through the change control process database.

It is anticipated by EUO that process changes will be needed after restart either to improve performance or to accommodate mission changes. Such changes have not been identified and are not considered within the scope of this restart. They will be implemented in accordance with plant procedures.

5.4 ORR

The Phase A1 and Phase A2 LMES and DOE ORRs will review processes supporting the accountability and casting functions of the Building 9212 operations area and the machining and rolling and forming function of the Building 9215 operations area. The Phase A1 and Phase A2 ORRs will also review implementation of programs. The ORRs will demonstrate EUO's ability to safely fulfill its mission.

The Phase A1 ORR will cover the metal working (casting, machining, and rolling and forming) operations plus some supporting accountability processes, and the second ORR (Phase A2) will cover the remaining accountability processes. All administrative and safety management programs (e.g., emergency management program) will be reviewed during Phase A1.

Each ORR will take a graded approach consistent with Appendix 1 of DOE-STD-3006-95. Grading will include the breadth of review based on the applicability of COs and the depth of review based on the importance to safety, hazards, facility characteristics, relevance to events leading to the stand down, and evidence from other assessments. The breadth of the ORRs is discussed in Section 6.

Review of support organizations will be included only as required to directly support processes included in the scope of the restart phase. Requirements will be the same as defined in procedures or in Memorandums of Understanding with the support organizations.

The LMES ORR will be preceded by a Management Self-Assessment (MSA) performed by a team of experienced Y-12 personnel. The MSA will confirm that required activities have been completed satisfactorily and that the facility is ready to restart. It will be based in part on prior internal assessments of individual processes and programmatic issues. When the MSA has been completed, the Vice President for Restart Operations will formally certify to the LMES ORR team leader that the facility is ready to operate.

ORR team support (e.g., facilities, evidence , and personnel) will be provided as required. Evidence that prerequisite activities have been completed will be available in the EUO Document Management Center (DMC) or other controlled location.

6. PROPOSED BREADTH OF THE ORR

The Phase A1 LMES and DOE ORRs will review the metal working (casting, machining, and rolling and forming) operations plus some supporting accountability processes. The Phase A1 LMES and DOE ORRs will review the remaining accountability processes. Table 1 identifies the processes included in each phase. The Phase A1 ORRs will also review all administrative and safety management programs (e.g., the emergency management program).

The DOE Order 425.1 defines 20 minimum core requirements (CRs) that must be addressed when defining the scope of the ORR. The DOE Standard DOE-STD-3006-95 translates these requirements into 36 COs to facilitate preparation of the ORR plan of action and review criteria. Four of the COs are identified in the standard as applying only to the DOE. The remaining 32 COs will be considered for the ORR as discussed in Appendix A. The applicable COs constitute the breadth of the ORRs.

All 32 contractor core objectives (CO) will be assessed during Phase A1. The review will cover both administrative and safety management programs and their implementation for Phase A1 processes. During Phase A2, any program assessments would be focused on their implementation with respect to Phase A2 processes.

The depth of review for each applicable CO will vary according to its importance to safety, the hazards involved, the characteristics of the facility, the CO's relevance to events leading to the stand down, and evidence from previous assessments in EUO or other areas of Nuclear Operations. The depth will be determined by varying the number of review criteria or the intensity of the review approach. Review approaches include documentation reviews, interviews, observations, walkdowns, and/or drills. Increased depth will be attained by applying more review approaches for a given CO.

7. ORR PREREQUISITES

Prerequisite conditions have been identified by LMES and DOE that must be satisfied prior to the Phase A1 LMES ORR. These prerequisites include processes, personnel, and management programs that must be in place. For Phase A2, the Phase A1 LMES ORR must also have been completed. These prerequisites are stated in Appendix A. The source of the requirement and the COs addressed are stated with each prerequisite.

Table 1

Phase A Processes

Phase A1 Processes

CASTING

Process Ventilation, E-Wing
Break & Shear
Casting, E/W Lines
Dry Vacuum, E-wing
Inventory & Verification
Metal Sampling
Pack & Ship
Storage, E-wing
Ultrasonic Chip Cleaning
Chip Packaging & Briquetting
Containers & Material Handling
Mop water Pour-up
Pickling
Utilities

ROLLING and FORMING

O-wing Ventilation
Billet Salt Bath
Gantry Robot System
Hydroform Press
Hydroform Oven
Process Rolling Mill
Plate Salt Bath
Roller Leveler
Scrap Shear
Sheet Rinse System
Utilities

MACHINING

Fire Protection, 9215
M-wing Ventilation
Accountable Vacuum
Building 9981 Certification
Chip Processing & Packaging
Chuck Vacuum
H2 Dimensional Inspection
Machine Coolant
Machining Operations
Mopwater/Floor Scrubber
Utilities

ACCOUNTABILITY - A1

9818 Tanks & Tankers (less Nitric Acid Receiving & Distribution)
Non-SNM Door
Package & Sampling, Chemical Areas
B1 Lab
General Receiving & Shipping
High Capacity Evaporators
NDA Lab
SNM Transfer Station
Storage, Chemical
Wet Vacuum
CAAS
Fire Protection, 9212
Utilities

Phase A2 Processes

Acidification Column
Decontamination Operations
Dry Air Glovebox
Jaw Crusher/Shear
Organic Handling, 9815
Pack & Sample/Bottle Rocker, Special Processing
AEC Scrubber
Beaker Leaching
Carbon Burners
Dry Vacuum, D-1
Holden Furnace
9818 Tanks and Tankers (Nitric Acid Receiving & Distribution)
Muffle Furnace
Organic Cleanup
Precipitator
Solids Oxide Processing
South Hood
Sorting Hood
TOPO Extraction
Tray Dissolver & Scrubber
Tube Furnace
Westfalia Centrifuge
Exhaust Systems, 9212
Utilities

8. ESTIMATED ORR START DATES AND DURATIONS

The LMES ORR is expected to commence approximately one week after certification of readiness. The LMES ORR will take approximately two weeks. The LMES ORR team training and familiarization will occur prior to the ORR start.

The DOE ORR is expected to commence immediately after the readiness to proceed letter is sent to the restart approval authority. In the interval, the LMES ORR findings will be evaluated, and all actions required for restart will be complete with the exception of a manageable list of open pre-start findings that have a well-defined schedule for closure.

The LMES Phase A1 ORR is planned to be from February 16 through February 27. The DOE Phase A1 ORR is planned to be from March 16 through March 21, 1998.

The LMES Phase A2 ORR is planned to be from March 23 through March 27. The DOE Phase A2 ORR is planned to be from April 6 through April 17, 1998.

9. PROPOSED ORR TEAM LEADER

The proposed team leader for the LMES ORR is J. P. Flynn, Manager, LMES Performance Evaluation Group. Appendix B summarizes Mr. Flynn's qualifications.

10. OFFICIAL TO APPROVE START OF ORRs

Approval for starting the LMES ORR will be granted by the LMES Vice President for Restart Operations. A certification of readiness from the Vice President to the LMES ORR team leader will be issued for the ORR.

Approval for starting the DOE ORR will be by the Manager, Oak Ridge Operations. A readiness to proceed notice and a copy of the LMES ORR report for that phase will be sent to the Manager, Oak Ridge Operations Office by the LMES Vice President for Restart Operations.

11. OFFICIAL TO APPROVE RESTART OF THE FACILITY

The DOE Order 425.1 specifies that the secretarial officer or designee must approve restart after an extended stand down of a Hazard Category 2 nuclear facility. The secretarial officer has designated the Manager, Oak Ridge Operations as restart authority or EUO.

12. REVIEWERS AND APPROVER

Reviewer:	N. C. Jessen	Manager, Enriched Uranium Operations
Reviewer:	C. J. Ihrig	Deputy for Transition and Integration
Reviewer:	L. A. Felton	Vice President, Restart Operations
Reviewer:	R. J. Spence	Manager, DOE Y-12 Site Office
Approver:	J. C. Hall	Manager, Oak Ridge Operations

References:

1. Nuclear Operations Conduct of Operations Manual
2. Y/MA-7296, "Index of Enriched Uranium Operations Memorandums of Understanding"
3. Y/AD-623, "Plan for Continuing and Resuming Operations"
4. Y/MA-7252, "The Basis of Interim Operation for Building 9212 Enriched Uranium Operation Complex"
5. Y/MA-7290, "The Basis for Interim Operation for Building 9215 Complex - Enriched Uranium Operations"
6. Y/MA-7243, "Enriched Uranium Operations (EUO) Restart Plan"
7. Y/MA-7255, "The Operational Safety Requirements for Building 9212 Enriched Uranium Operation Complex"
8. Y/MA-7291, "The Operational Safety Requirements for Building 9215 Complex - Enriched Uranium Operations"
9. Nuclear Operations Conduct of Training Manual

Additional References (for information only):

10. OP-551, "Operational Readiness Review and Assessment Process" (Rev. 1)
11. DOE Order 425.1, "Startup and Restart of Nuclear Facilities"
12. DOE Standard DOE-STD-3006-95, "Planning and Conduct of Operational Readiness Reviews (ORR)"
13. DOE Standard DOE-STD-3011-94, "Guidance for Preparation of DOE 5480.22 (TSR) and DOE 5480.23 (SAR) Implementation Plans"
14. DOE Order 5480.20A, "Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities"

Distribution:

J. J. Bolon
M. L. Brown, EUO-DMC (RC)
T. R. Butz
J. P. Crociata
L. A. Felton
J. P. Flynn
T. F. Gorman
D. D. Grandâge
F. P. Gustavson
G. F. Hagan
R. M. Harding
C. J. Ihrig
J. D. Jackson, DOE-ORO
N. C. Jessen
L. G. Loden
A. F. Moore
M. K. Morrow
R. L. Patton
S. D. Richardson, DOE-ORO
R. D. Sabin
R. J. Shelton
R. J. Spence, DOE-ORO
M. A. Sundie, DOE-ORO
J. D. Watkins
A. K. Zava

This page intentionally left blank

Appendix A
Proposed Scope of Phase A Operational Readiness Review (ORR)

A1 Physical Scope

The scope of the Phase A ORRs will be the processes important to the accountability and casting functions of the Building 9212 operations area and the machining and rolling and forming functions of the Building 9215 operations area. These processes are listed in Table A1. (The Table A1 information provides information available as of August 1, 1997. This table will not be updated for the POA. Complete and revised information will be available prior to the ORR.) For plant-wide systems (e.g., Criticality Accident Alarm System), the scope will be limited to portions within the operations area boundaries as defined in the "Nuclear Operations Conduct of Operations Manual" and shown in Figures 1 and 2.

The Phase A1 ORRs will review the metal working (casting, machining, and rolling and forming) operations plus some supporting accountability processes. The Phase A2 ORRs will review the remaining accountability processes. Table 1 identifies the processes included in each phase.

A2 Core Objectives (COs)

This section lists the COs applicable to the LMES ORR. It also summarizes factors affecting the review for each CO. The corresponding DOE Order 425.1 core requirements (CRs) are in parenthesis.

CO-1 "Facility safety documentation is in place that describes the safety envelope of the facility." (CR-4)

This CO will be satisfied by having safety documentation approved and implemented according to approved plans. The safety documentation applicable to the ORR is the Basis for Interim Operation (BIO), the Operational Safety Requirements (OSR), and the Criticality Safety Requirements (CSR). The BIOs and OSRs are based on DOE-STD-3011-94 and are approved by DOE. The applicable BIOs and OSRs are identified below. The CSRs are approved by the Y-12 Nuclear Criticality Safety Organization. The CSRs approved as of August 1, 1997 are listed in Table A1 for information; a completed and revised listing will be available prior to the ORR.

- Y/MA-7252, "The Basis for Interim Operations for Building 9212 Enriched Uranium Operations Complex"
- Y/MA-7290, "The Basis for Interim Operations for Building 9215 Complex - Enriched Uranium Operations,"

Table A1. Phase "A" Processes*

Process	Major Equipment	Recording	CSR	Operating Procedure**	Title
ACCOUNTABILITY					
Acidification Column	Column Tanks	1 Misc	CSR-MWS-051	JPA-C1-MWS-0001 Y50-37-98-661 JPA-EU-0008	Solution Receipt from Building 9215 Transferring Solution From F-541 Tanks to F-501 Tanks Solution Bag Filter Changeout
9811 Tanks & Tankers	Acid tanks Tanker stations Waste tanks	7 3 Misc	CSR-NR&HN03-019	Y50-37-96-051 Y50-37-96-052 Y50-37-96-053 Y50-37-96-054 Y52-37-96-051 JPA-CW-PUS-0001	Waste Solution Transfer Operation of NR-F-34, Condensate Recycle Tank Nitric Acid - Receiving, Storing, and Handling Nitric Acid - Distribution of 30% Nitric Acid Tank F-604 Inlet Distributor and Tank Bottom Annual Surveillance C-1 Wing, NR-F-700, Pour-up Station
Decon Operations	Tanks Hood Bottle washer	Misc 4 2	CSR-DEC-022	Y50-37-98-818 Y50-37-98-999 Y57-37-98-002 Y57-37-98-008	Ultrasonic Bottle Washer Decontamination Facility Operation Decontamination Facility Alarm Response Ultrasonic Bottle Washer Alarm Response
Dry Air Glovebox	Glove box Blender	1 1	CSR-DAG-004	JPA-SP-DAG-0001 JPA-SP-DAG-0004 JPA-SP-DAG-0006 JPA-SP-DAG-0007 JPA-SP-DAG-0010	DAG-R-85, Blend/Samp Dry Box Operations DAG-R-85, Blend/Samp Dry Box Material Blending and Sampling Container and Sample Processing Container/Materials Cleaning DAG-R-85, Blend/Samp Dry Box Functional Checks
Jaw Crusher/Shear	Hood Crusher Shear Stack 114 Glove box	1 1 1 1 1	CSR-SHC-043	JPA-SP-SHC-0001 JPA-SP-SHC-0002 JPA-SP-SHC-0003 JPA-SP-SHC-0004 Y52-37-90-001	Jaw Crusher Operation in Rm 1021 Power Hacksaw Operations in Rm 1021 Shear Operations in Rm 1021 Rod Mill Operation in Room 1021 Surveillance of Drain Hole Check Valve on Jaw Crusher Glove Box
Non-SNM Door	Dock 6 Dock 14	1 1	CSR-NSNM-031	Y50-37-037 Y20-PS-37-819	Non-SNM Transfer Station Operations For Building 9212 Non-SNM Transfer Station Operations
Organic Handling	Dilution Equipment Gamma Survey Hood	1 1 1	CSR-OIL-034	Y50-37-96-010 Y50-37-96-055	Transfer and Disposal of Organic Solution Organic Assay Reduction
Pack & Sample/Bottle Rocking/Special Processes	Bottle rocker Sample station V Blender Hood Stack 26	1 1 1 1 1	CSR-REC-039	Y50-37-90-108 Y50-37-90-220 Y50-37-90-227 Y57-37-90-001 JPA-SP-PAC-0001 JPA-SP-PAC-0002	Sampling of Uranium Oxide/Compounds Type A and B Shipments Using DOT Specification 6M/2R Packaging (U) Packaging Oxide for Storage and Shipment Room 1004 Loss of Ventilation ARP Safe Bottle Sampling Blending of Oxides

*This table provides information available as of August 1, 1997. The table will not be updated in the POA. Complete and revised information will be available prior to the ORR.

** 50 - System Operating Procedure
52 - Surveillance Procedure
56 - Abnormal Operating Procedure
57 - Alarm Response Procedure
70 - Health Safety,
JPA - Job Performance Aid

Table A1. Phase "A" Processes*

Process	Major Equipment	Relation	CSR	Operating Procedure**	Title
Package and Sampling, Chemical Areas	Glove box V Blender Filter/Separate Station Bottle Rocker	1 1 1 1			
AEC Scrubber	Fans Filters Scrubber Stack 134	2 Misc 1 1	CSR-AEC-024 CSR-AEC-013 CSR-AEC-026 CSR-AEC-021	Y50-37-038 Y50-37-90-114 Y50-37-98-313 Y52-37-002 Y52-37-003 Y52-37-004 Y52-37-005 Y52-37-009 Y52-37-010 Y52-37-011 Y52-37-012 Y52-37-018 Y52-37-98-002 Y52-37-98-003 Y52-37-98-004 Y52-37-98-005 Y52-37-98-006 Y52-37-98-007 Y52-37-98-008 Y52-37-98-009 Y52-37-98-010 Y52-37-98-011 Y56-37-98-001 Y56-37-98-002 Y56-37-98-004 Y56-37-98-005 Y57-37-92-007 Y57-37-93-003 Y57-37-98-009	Air Emission Control (AEC) Exhaust System Stack 134 Exhaust Scrubber SPS-L-1300 Operation Air Emission Control (AEC) C-Wing Scrubber System, AEC Exhaust System Roof Components Holdup Survey AEC Exhaust System Roof Components Annual Inspections AEC Exhaust System B-1 Dry Exhaust Filter House AG-9001 Fil AEC Exhaust System B-1 Dry Exhaust Filter House AG-9001 D/ AEC Exhaust System B-1/C-1 Wing Dry Process Feeds Annual I Inspection AEC Exhaust System B-1/C-1 Wing Scrubber Feeds Ductwork II AEC Exhaust System B-1/C-1 Wing Scrubber Feeds Ductwork A AEC Chemical Processing Ventilation Low Point Inspection AEC Exhaust System Exhaust Duct Vent Trap Inspection AEC Exhaust System C-Wing Scrubber L-9301 Packing Liquid I Measurement AEC Exhaust System Recirculating Scrubber Solution U Concent AEC Exhaust System Non-Circulating Scrubber Solution U Conc Verificatio AEC Exhaust System C-Wing Interior Ducting and Scrubber Filt AEC Exhaust System Filter House AG-9301 and Ductwork Inspe AEC Exhaust System C-Wing Scrubber Equipment and Ductwor AEC Exhaust System C-Wing Scrubber L-9301 Components Insp AEC Exhaust System Junction Box Drain Hole Inspection AEC Exhaust System Instrument Cabinet Drain Hole Inspection AEC Exhaust System Filter House AG-9301 Filter D/P Monitorin AEC C-Wing Scrubber System Response to Abnormal conditions AEC C-Wing Scrubber System Loss of Instrument Air Air Emission Control (AEC) C-Wing Scrubber Manual Bypass Sc F. AEC C Wing Scrubber System Scrubber Overflow or Other Solut Data Acquisition Module (DAM) Stack Alarm Response Air Emission Control (AEC) K-9000 B-1 Dry Exhaust Panel ARI AEC C-Wing Scrubber System Panel Alarm Response

*This table provides information available as of August 1, 1997. The table will not be updated in the POA. Complete and revised information will be available prior to the ORR.

** 50 - System Operating Procedure
52 - Surveillance Procedure
56 - Abnormal Operating Procedure
57 - Alarm Response Procedure
70 - Health Safety,
JPA - Job Performance Aid

Table A1. Phase "A" Processes*

Process	Major Equipment	Restarting	CSR	Operating Procedure**	Title
B-1 LAB	Hoods Pourup station Lab equipment	All 1 Misc	CSR-LAB-018	Y50-37-93-800 Y50-37-93-796 Y56-37-93-001 Y56-37-93-002 Y56-37-93-003 Y56-37-93-004 JPA-B1-LAB-0001 JPA-B1-LAB-0003 JPA-B1-LAB-0004 JPA-B1-LAB-0005 JPA-B1-LAB-0006 JPA-B1-LAB-0007 JPA-B1-LAB-0008 JPA-B1-LAB-0009 JPA-B1-LAB-0010 JPA-B1-LAB-0011 JPA-B1-LAB-0012 JPA-B1-LAB-0013 JPA-B1-LAB-0014 JPA-B1-LAB-0015 JPA-B1-LAB-0016 JPA-B1-LAB-0017 JPA-B1-LAB-0018 JPA-B1-LAB-0019 JPA-B1-LAB-0020 JPA-B1-LAB-0021	Fluorometer Setup B-1 Lab Uranium Concentration Counter Operation Response to Granular or Powder Spills in B-1 Process Laboratory Response to Strong Odors, Chemical Reaction, or Fire in B-1 Lab Response to Solution Spills Containing Fissile Material in B-1 Pr Response to Liquid Spills in B-1 Process Laboratory Use of Laboratory Hoods Preparing a 10.0 PPM U Standard Solution Preparing Buttons Testing Blank and 10.0 ppm U Standard Buttons Calibrating the Fluorometer Standard PPM Analysis Caustic PPM Analysis Raffinate PPM Analysis Measuring Specific Gravity Calibrating the pH Meter pH Analysis Sampling Unknown Acid Solutions F-261 Raffinate Composite Secondary Extraction Product Submitting Samples Making Up E-Wing Isopropanol Stock Solution Making Up TOPO Solution for B-1 Lab Using the Ultrasonic Cleaner Cleaning and Reusing Plastic Bottles, Lids, and Glassware Preparation of Separatory Funnels
Beaker Leaching	Hoods Pan filter	5 1	CSR-B1-050	Y50-37-90- Y50-37-92- Y50-37-92-100 Y50-37-90-206 Y56-37-92-003 Y56-37-92-004	Room 1022 Wet Vacuum Trap Normal Operations Room 29 Leachate Collection Columns A&B Normal Operations Small Batch Dissolution Beaker Leaching Room 1022 Small Beaker Leaching Response to Uncontrolled or Explosive Material Reaction Response to Material Fire
Carbon Burners	Furnaces Dry vacuum	2 1	CSR-CB-042	Y50-37-92-404 Y57-37-98-022	Carbon Burner Operations Carbon Burner Alarm Response
Dry Vacuum - D-1	Cyclone separators Vacuum producer	2 1	CSR-DV-4-028	Y50-37-94-008 Y56-37-98-019 Y56-37-98-020 Y56-37-98-021 Y56-37-98-022 Y56-37-98-023	D-1 Dry Vacuum System Operation Water in the Headhouse Dry Vacuum System Plugged Headhouse Primary Cyclone Separator Plugged Headhouse Dry Vacuum System Piping Hot Oxide in Headhouse Dry Vacuum Trap High Level in Headhouse Dry Vacuum Trap

*This table provides information available as of August 1, 1997. The table will not be updated in the POA. Complete and revised information will be available prior to the ORR.

** 50 - System Operating Procedure
52 - Surveillance Procedure
56 - Abnormal Operating Procedure
57 - Alarm Response Procedure
70 - Health Safety,
JPA - Job Performance Aid

Table A1. Phase "A" Processes*

Process (Phase A)	Major Equipment	Quantity	USQ CSR	Operating Procedures**	Title of Procedures
General Receiving and Shipping			CSR-C-IR&S-048	Y50-37-031 Y50-37-90-100 Y50-37-98-659 JPA-EU-0003 JPA-EU-0004 JPA-EU-0006	Movement of Samples Between EUO and ASO Receipt and Shipment of Special Nuclear Materials 9212 Receipt and Shipment of SNM Uranium Enrichment Verification Scale Operation in Building 9212 Loading/Unloading SNM Vehicle; Building 9212
High Capacity Evaporators	Evaporators Tanks Pourup station Condensers Cooler	1 Misc 2 1 1	CSR-HC-041	Y50-37-98-601 Y50-37-98-602 Y50-37-98-660 Y50-37-98-662 Y52-37-98-015 Y52-37-98-016 Y56-37-98-006 Y56-37-98-007 Y56-37-98-013 Y57-37-98-018 Y57-37-98-021 Y57-37-98-023	High Capacity Evaporator Operation High Capacity Evaporator Process Condensate Monitor Test Solution Transfer Into The F501 Tanks Process Condensate Tank Operations Feed Leg Overflow Test Annual HCAO-C-7101 Surveillance Responding to Organics in a Trap or Phase Separator Responding to Solution Entering the Vent System Response to Solution in the Evaporator Crystallizing High Gamma Activity Alarm on Process Condensate System High Conductivity Alarm on Steam Condensate System Basement Process Condensate Alarms
Holden Furnace	Furnace Hoods Exhaust cooler	1 2 1	CSR-HGF-052	Y50-37-92-403 Y52-37-92-002 Y56-37-92-006 Y56-37-92-009 Y56-37-92-007 Y57-37-92-008	Gas-Fired Holden Furnace Operation Holden Gas Fired Furnace Surveillance Response to Holden Gas Fired Furnace Explosion Response to Holden Gas Fired Furnace Natural Gas Leak Response to Holden Gas Fired Furnace Ductwork Smoke or Fire Holden Gas Fired Furnace Control Panel Alarm Response
Muffle Furnace	Furnaces Condensers	2 2	CSR-MF-003	Y50-37-92-400 Y56-37-92-002	Muffle Furnace Drying Operation Muffle Furnace System Response to Abnormal Conditions
Nondestructive Analysis Lab	Drum scanner Can scanner Instruments	1 1 Misc	CSR NDA-020	JPA-NDA-PU-0001 JPA-NDA-PU-0002 Y/P65-1068 Y/P65-1069 Y/P65-1070 Y/P65-1072 Y/P65-1077	Flask Pour-Up in NDA Lab 55-gallon Drum Consolidation in the NDA Lab Process Waste Uranium Analysis Using the Barrel Scanner Solution Density Determination Using the Vibrating-Probe Density Process Waste Uranium Analysis Using the Can Scanner Uranium Analysis of High-Density Materials Using the Active Wel Counter Uranium Analysis of Liquids Using Solution Assay System
Organic Cleanup	Columns Pourup station Pan filter Tanks	4 1 1 3	CSR-OT-017	Y50-37-98-901 Y57-37-98-014 Y57-37-98-020	Organic Processing ORP-F-300-89, Machine Cleanup Vacuum Trap ARP Organic Treatment ARP

*This table provides information available as of August 1, 1997. The table will not be updated in the POA. Complete and revised information will be available prior to the ORR.

** 50 - System Operating Procedure
52 - Surveillance Procedure
56 - Abnormal Operating Procedure
57 - Alarm Response Procedure
70 - Health Safety.
JPA - Job Performance Aid

Table A1. Phase "A" Processes*

Process	Major Equipment	Restarting	CSR	Operating Procedures**	Title
Precipitator	Precipitators Tanks Centrifuges Hood Stack 128	2 10 2 1 1	CSR-PRCP-038	Y50-37-90-223 JPA-EU-0009	Precipitator and Centrifuge Operation pH Analyzer
SNM Transfer Station	Dock 6 Dock 7	1 1		JPA-EU-0001 JPA-EU-0002	Open & Close SNM Door while Transfering SNM Open & Close SNM Door without SNM Vehicle Present
Solids Oxide Processing	Hoods Sintering furnace Chip burners V Blender Shaker Rod Mill Canner	3 3 3 2 4 2 2	CSR-SOP-027	Y50-37-90-226	HFIR Production
Sorting Hood	Hood	1	CSR-SORT-045	Y50-37-92-420	Combustible Sorting & Packing
South Hood	Hoods V Blender Rod Mill Screener	2 1 1 1		JPA-HHSH-L-64A-0001 JPA-HHSH-L-64B-0001 JPA-HHSH-R-64-0001 JPA-HHSH-R-64-0002 JPA-HHSH-R-65-0001 JPA-HHSH-R-65-0002 JPA-HHSH-R-64/65-65- JPA-HHSH-R-64/R-65-0 JPA-HHSH-R-64-0003	HHSH-L-64A, V-Blender Operation HHSH-L-64B, Shaker/Vibrator HHSH-R-64 Sampling HHSH-R-64 Unload Muffle Pans HHSH-R-65 HEPA Filter Processing HHSH-R-65 Rod Mill Operation HHSH-R-64/R-65 Pre Filter Change-out South Hood Functional Checks Canning Dried Material
Storage - Chemical	Areas	Misc			
TOPO Extraction	Column Pump Tanks	1 1 1	CSR-TOP-046	Y50-37-91-902	TOPO Extraction Operation

*This table provides information available as of August 1, 1997. The table will not be updated in the POA. Complete and revised information will be available prior to the ORR.

** 50 - System Operating Procedure
52 - Surveillance Procedure
56 - Abnormal Operating Procedure
57 - Alarm Response Procedure
70 - Health Safety,
JPA - Job Performance Aid

Table A1. Phase "A" Processes*

Process	Major Equipment	# Retained	CSR	Operating Procedure**	Title
Tray Dissolver and Scrubber	Tray dissolvers Hoods Stack 46/47 Tanks Sample Column Stack 45 Pour up station Pan filter Scrubber	8 4 1 Misc 2 1 13 1 1	CSR-TD-040	Y50-37-90-102 Y50-37-90-112 Y50-37-90-115 Y50-37-90-232 Y50-37-90-233 Y50-37-90-xxx	Sampling of Solutions - Sampling Columns System Tray Dissolver System - Scrap Recovery - Room 1021 Small Lot Tray Dissolvers Dissolution of Uranium-Zirconium Alloy in Tray Dissolvers Precipitator Feed Preparation Using Tray Dissolvers Operation of Tray Dissolver Storage Tanks
Tube Furnace	Furnaces	3	CSR-STF-030	Y50-37-90-201 Y57-37-90-002	Tube Furnace Operation High Temperature Alarm Response for Tube Furnaces B51, B52, and B53
Westfalia Centrifuges	Centrifuge Pan filters Hoods Tanks Pumps	1 3 3 Misc 2	CSR-WC-049	Y50-37-98-510 Y50-37-98-663 Y50-37-98-664 Y52-37-98-017 Y56-37-98-008 Y56-37-98-009	Westfalia Centrifuge G-7112 Operation Transferring Solution from PU-F-571 to F-501 Tanks WC-R-34 Pan Filter Hood Operation Westfalia Centrifuge Annual Surveillance Response to Excessive Vibration Response to Westfalia Centrifuge Leaks
Wet Vacuum	Vacuum producer Traps	1 Misc	CSR-WVS-025	Y50-37-036 Y50-37-92-503 Y50-37-93-998 Y52-37-001 Y52-37-92-001 Y52-37-93-001 Y52-37-98-025 Y56-37-92-001 Y57-37-92-002 Y57-37-92-003 Y57-37-92-004 Y57-37-92-005 Y57-37-92-006 Y57-37-93-001 Y57-37-93-002 Y57-37-98-010 Y57-37-98-011 Y57-37-98-012 Y57-37-98-013 Y57-37-98-014 Y57-37-98-015 Y57-37-98-016 Y57-37-98-017	Generic Wet Vacuum Trap Normal Operations Headhouse Fan Room Wet Vacuum Normal Operations B-1 Wing Final Wet Vacuum Trap Normal Operations Generic Wet Final Vacuum Trap Surveillance Bimonthly Draining of Basement Wet Vac Header B-1 Wing Final Wet Vacuum Trap Surveillance Fan Room Wet Vacuum Trap System Weekly Surveillance Response to Abnormal Situation Involving Liquid Accumulation in Wet Vacuum Basem High Level Vacuum Trap WVS-F-730A ARP High Level Vacuum Trap WVS-F-710 Alarm Response High Level Vacuum Trap WVS-F-730B ARP Low Process Water Flow to Barometric Condenser ARP WVS-F-760 Headhouse Final Wet Vacuum Trap ARP General Wet Vacuum Alarm B-1 Wing ARP WVS-F-100 B-1 Final Wet Vacuum Trap ARP High Level Vacuum Trap WVS-F-380 ARP High Level WVS-F-700A, Barometric Condenser General Wet Vacuum C-1 Wing ARP Wet Vacuum to Steam Jet Ejectors High Pressure ARP ORP-F-300-09, Machine Cleanup Vacuum Trap ARP CISC-F-9137, Vacuum Trap ARP WVS-F-5, Deacon Final Trap ARP WVS-F-300 West C-1 Final Wet Vacuum Trap ARP

*This table provides information available as of August 1, 1997. The table will not be updated in the POA. Complete and revised information will be available prior to the ORR.

** 50 - System Operating Procedure 52 - Surveillance Procedure 56 - Abnormal Operation Procedure

Table A1. Phase "A" Processes*

Process	Major Equipment	[illegible]	CSR	Operating Procedure	[illegible]
CAAS	Detectors	All	None	Y50-53-50-035 Y50-53-50-041	Surveillance of Criticality Accident Alarm System for Buildings 92 and 9998 Criticality Accident Alarm Signal Design Basis Verification for Bui 9215, 9995, and 9998
Exhaust System	Stack 27 Stack 28 Stack 33 Stack 44 Fans Filters	1 1 1 1 Misc Misc	CSR-S27-036 CSR-S28-035 CSR-S33-011	Y50-37-656 Y50-37-90-234 Y50-37-90-235 Y50-37-92-505 JPA-9212-S28-0001	Bag In/Bag Out Filter Replacement Stack 27 Fan Operation Stack 28 Fan Operation Stack 33 Exhaust Fan Operations PCV-1 Gradual Switch Operation
Fire Protection-9212	Sprinklers	OSR-required		Y52-37-019 Y52-51-F0013 Y52-51-F0014 Y52-51-100	Building 9212 Fire Safety Inspection Fire Suppression System Monthly Inspection Wet Pipe Sprinkler System Semi-Annual Surveillance Freeze Protection and Anti-Freeze System Annual Surveillance
CASTING					
Process Ventilation E-Wing	Stack 38 Stack 43 Stack 48 Stack 110	1 1 1 1	CSR-S38-032 CSR-S43-023 CSR-S48-033 CSR-S110-015	Y50-37-65-006 Y50-37-65-010 Y50-37-65-517 Y57-37-65-012 Y57-37-65-013 Y57-37-65-014 Y57-37-65-015 Y57-37-65-017 Y57-37-65-022 Y57-37-65-027 JPA-EW-S38-0001 JPA-EW-S43-0001 JPA-EW-S43-0002 JPA-EW-S48-0001 JPA-EW-S110-0001 JPA-9212-S110-0001 JPA-9212-S110-0002	Bag Filter Changeout Support HEPA Filter Replacement Stack 110 (HEPA Filter House) Changeout of Non-HEPA Final Filters Stack 43 BAP-3 Alarm Response Stack 43 DAM-1 Alarm Response BAP-1 Alarm Response BAP-2 Alarm Response Stack 43 BAP-2 Alarm Response BAP-3 Alarm Response Stack 43 BAP-1 Alarm Response Procedure S38-EF-101 Fan Operation S43-EF-501 Fan Operation Stack 43 Filter House Drains Container Operation S48-E-101 Fan Operation Bag Filter Inspection, Shakedown, and Trap Changeout Stack 110 Exhaust Fan Operation PCV-113 Gradual Switch Operation
Break & Shear	Presses Shears	3 2	CSR-BKS-001	JPA-E-BKS-L-45-0001 JPA-E-BKS-L-75-0002 JPA-E-BKS-L-150-0003 JPA-E-BKS-L-1-0004 JPA-E-BKS-L-2-0005 JPA-E-BKS-L-150.1-0006	45-Ton Break Press Operation 75-Ton Break Press Operation 150-Ton Break Press Operation Pneumatic Alligator Shear Operation D-1 Wing (Alligator) Shear Operation 150 Ton Break Press Operation for Items Listed in Y/MA-7240

*This table provides information available as of August 1, 1997. The table will not be updated in the POA. Complete and revised information will be available prior to the ORR.

** 50 - System Operating Procedure; 52 - Surveillance Procedure; 56 - Abnormal Operating Procedure; 57 - Alarm Response Procedure; 70 - Health Safety; JPA - Job Performance Aid

Table A1. Phase "A" Processes*

Process	Major Equipment	# Restarting	CSR	Operating Procedures**	Title
Casting E/W Lines	Furnaces Vacuum pumps Hoods	6 of 12 6 All	CSR-C-016	Y52-37-65-004 Y56-37-65-006 Y56-37-65-007 Y56-37-65-008 Y56-37-65-009 Y56-37-65-010 Y56-37-65-011 Y56-37-65-012 Y56-37-65-013 Y56-37-65-014 Y56-37-65-015 Y56-37-65-016 Y57-37-65-028 Y57-37-65-029 JPA-EW-C-BMU-0001 JPA-EW-C-BMU-0002 JPA-EW-C-SACL-0001 JPA-EW-C-SACL-0002 JPA-EW-C-FLUL-0001 JPA-EW-C-FLUL-0002 JPA-EW-C-FLUL-E0002 JPA-EW-C-FLUL-E0003 JPA-EW-C-FLUL-W0002 JPA-EW-C-FLUL-W0003 JPA-EW-C-CAST-E0001 JPA-EW-C-CAST-W0001 JPA-EW-C-CAST-E0002 JPA-EW-C-CAST-W0002 JPA-EW-C-KO-0001 JPA-EW-C-KO-0002 JPA-EW-C-C&C-0001 JPA-EW-C-C&C-0002 JPA-EW-C-C&C-0003 JPA-EW-C-C&C-0004 JPA-EW-C-C&C-0005 JPA-EW-C-C&C-0006 JPA-EW-C-C&C-0007 JPA-EW-C-HYD-0001 JPA-EW-C-VAC-0001 JPA-EW-C-CLCW-0001 JPA-EW-C-CLCW-0002	E Wing Casting Furnace Water Detection Functional Test Loss of Power During Casting Activities Loss of Ventilation During Casting Activities Batch Spill Self-Ignited Material Fire Stack Tip-Over Broken Pouring Rod Failure to Pour Casting Furnace Trip Low Plant Air Pressure Broken Water Sight Glass Stack Tip-Over - Post-Casting Casting Furnace Alarms - East Line Casting Furnace Alarms - West Line E Wing Casting - Batch Make-Up Batch Make-Up Hood Inventory Cleanout E Wing Casting - Stack Assembly E Wing Casting - Crucible Loading E Wing Casting - Main Line Conveyor E Wing Casting - Main Line Conveyor Unloading E Wing Casting - East Furnace Loading E Wing Casting - East Furnace Unloading E Wing Casting - West Furnace Load E Wing Casting - West Furnace Unloading E Wing East Furnace Preparation E Wing West Furnace Preparation E Wing East Furnace Operations E Wing West Furnace Operations E Wing Casting - Knockout E Wing Casting - Shape (Part) Cleaning E Wing Casting Graphite Cleaning E Wing Casting - Graphite Preparation E Wing Casting - Graphite Coating E Wing Casting - Wet Spray Gun Operation E Wing Casting - Wet Spray Gun Cleaning E Wing Casting - Skull Burning Hot Plate Operation Furnace Hydraulics Vacuum Pump Operation Closed Loop Cooling Water Closed Loop Cooling Water Treatment

*This table provides information available as of August 1, 1997. The table will not be updated in the POA. Complete and revised information will be available prior to the ORR.

** 50 - System Operating Procedure 52 - Surveillance Procedure 56 - Abnormal Operating Procedure

Table A1. Phase "A" Processes*

Process	Major Equipment	Redundancy	CSR	Operating Procedure	Title
Dry Vacuum, E-Wing	Vacuum producers Filters Traps	2 of 3 2 of 3 2 of 3	CSR-DVS-005	Y50-37-65-004 Y50-37-65-005 Y50-37-65-007 Y52-37-65-001 Y52-37-65-002 Y52-37-65-003 Y56-37-65-001 Y56-37-65-002 Y56-37-65-003 Y56-37-65-004 Y56-37-65-005 Y57-37-65-001 Y57-37-65-002 Y57-37-65-003 Y57-37-65-004 Y57-37-65-005 Y57-37-65-006 Y57-37-65-007 Y57-37-65-008 Y57-37-65-009 Y57-37-65-010 Y57-37-65-011 JPA-EW-DVS-0001 JPA-EW-DVS-0002 JPA-EW-DVS-0003 JPA-EW-DVS-0004 JPA-EW-DVS-0005 JPA-EW-DVS-0006 JPA-EW-DVS-0007 JPA-EW-DVS-0008	Dry Vacuum System Inspections Dry Vacuum System Maintenance Support Dry Vacuum System Operation E Wing Dry Vacuum Level Detectors Functional Test and Calibrat E Wing Dry Vacuum Fire Sprinkler Interlock Functional Test E Wing Dry Vacuum Bag Filter Differential Pressure Interlock Fur High Level in Dry Vacuum Trap Hot Oxide in Dry Vacuum Trap Plugged Dry Vacuum System Piping Plugged Primary Cyclone Separator Water in Dry Vacuum System 9212 E-Wing Dry Vacuum Trap G-2 High Level Alarm 9212 E-Wing Dry Vacuum Trap G-3 High Level Alarm 9212 E-Wing Dry Vacuum Trap G-4 High Level Alarm 9212 E-Wing Dry Vacuum Trap G-6 High Level Alarm 9212 E-Wing Dry Vacuum Trap G-18 High Level Alarm 9212 E-Wing Dry Vacuum Trap G-9 High Level Alarm 9212 E-Wing Dry Vacuum Trap G-10 High Level Alarm 9212 E-Wing Dry Vacuum Trap G-9 Remote High Level Alarm 9212 E-Wing Dry Vacuum Trap G-2 Remote High Level Alarm 9212 E-Wing Dry Vacuum Trap G-4 Remote High Level Alarm 9212 E-Wing Dry Vacuum Trap G-10 Remote High Level Alarm E Wing Dry Vacuum System - Vacuuming Dry Materials E Wing Dry Vacuum Trap Changeout E Wing Dry Vacuum Bag Filter Replacement E Wing Dry Vacuum System - Inventory E Wing Dry Vacuum System Bag Filter Weekly Inspections E Wing Dry Vacuum System - Quarterly Inspections E-Wing Dry Vacuum System - Daily Inspection E Wing Dry Vacuum System - Purge and Survey
Inventory & Verification	None	All	CSR-IV-007	Y50-37-65-516 JPA-EW-VPD-0001 JPA-EW-VPD-0002 JPA-EW-VPD-0003 JPA-EW-VPD-0004 JPA-EW-VPD-0005 JPA-EW-VPD-0006 JPA-EW-VPD-0007 JPA-EW-VPD-0008 JPA-EW-VPD-0009	E Wing Equipment Holdup Survey Physical Inventory Listing Preparation Physical Inventory Listing Physical Inventory Listing Preparation Dumping Inventory Data to PC Editing Inventory Data Adding, Browsing, and Printing Inventory Data Downloading Inventory Data from PC to Floppy Disk Emergency Inventory Listing Reader/Tag Card Use
Metal Sampling	Drill Press Clean/pack hood	2 1	CSR-SMPL-010	Y50-37-65 009	Enriched Uranium Sampling

*This table provides information available as of August 1, 1997. The table will not be updated in the POA. Complete and revised information will be available prior to the ORR.

** 50 - System Operating Procedure
52 - Surveillance Procedure
56 - Abnormal Operating Procedure
57 - Alarm Response Procedure
70 - Health Safety,
JPA - Job Performance Aid

Table A1. Phase "A" Processes*

Process Step	Major Equipment	Redrilling	CSR	Operating Procedures**	Title
Pack & Ship	Hood	1	CSR-EPKS-006	Y50-37-65-501 Y50-37-65-507 Y50-37-65-508 Y50-37-65-509	E- Wing Nuclear Material Shipping and Receiving Operations Type A and B Shipments Using DOT Specification 6M/2R Packagin Packing Metal Cans (U) Loading, Testing, and Shipping AWG 630 Containers
Storage, E-Wing	Arrays Racks Vaults	Misc Misc Misc	CSR-STOR-E-014		
Ultrasonic Chip Cleaning	Stations	2	CSR-USC-029	Y50-37-65-101 Y50-37-65-522 Y50-37-65-523 Y50-37-65-524 Y50-37-65-525 Y56-37-65-017 Y57-37-65-031	2 Cylinder Uranium Chip Preparation Chip Dolly Cleaning Waste Water Disposal Blending and Transfer Evaporator Operation Processing Chips with No Basket Ultra Sonic Chip Cleaning ARP
Chip Packaging & Briquetting	Press Ovens Hoods	1 4 2	CSR-CP-044	Y50-37-65-104	Enriched Uranium Chip Drying and Briquetting
Containers & Material Handling	Hoists Dumbwaiters	2 3	CSR-CMH-012	Y70-37-103	Containers and Material Handling
Mop Water Pour-Up	Tanks Hood	Misc 1	CSR-MWPU-009	Y50-37-65-011 Y57-37-65-016 JPA-EU-0008	Mop Water Processing MWPU-K-201 Storage Tank Alarm Panel Solution Bag Filter Changeout
Pickling	Hood	1	CSR-PKL-008	JPA-EW-PKL-0002 JPA-EW-PKL-0003 JPA-EW-PKL-0004	E-Wing Metal Pickling Shutdown Operation E-Wing Batch Pickling Operation E-Wing Part Pickling Operation
MACHINING					
Fire Protection, 9215	Sprinkler systems	OSR-required		Y52-37-020 Y52-37-021 Y52-51-F0013 Y52-51-F0014 Y52-51-100	Building 9998 Fire Safety Inspection Building 9215 Fire Safety Inspection Fire Suppression System Monthly Inspection Wet Pipe Sprinkler System Semi-Annual Surveillance Freeze Protection and Anti-Freeze System Annual Surveillance
M-Wing Ventilation	Stack 3 Fans Filters	1 Misc Misc			

*This table provides information available as of August 1, 1997. The table will not be updated in the POA. Complete and revised information will be available prior to the ORR.

** 50 - System Operating Procedure
52 - Surveillance Procedure
56 - Abnormal Operating Procedure

Table A1. Phase "A" Processes*

Process	Major Equipment	Restarting	CSR	Operating Procedure**	Title
Accountable Vacuum	Compressors	2	CSR-AVS-055		
Building 9981 Certification	Linear Accelerator X-ray	2 1	CSR-PC		
Chip Processing & Packing	Hoods	3	CSR-CPK		
Chuck Vacuum	Compressors	2	CSR-CV		
H-2 Dimensional Inspection	Inspection equipment	1	CSR-H2		
Machine Coolant	Transfer pump Tanks Trays	All All All	CSR-MC	Y50-37-10-002	Machining Coolant System - M-Wing Building 9215
Machining Operations	Lathes Drills Grinders Milling machines	Misc	CSR-MO		
Mopwater/Floor Scrubber	Hood Floor scrubbers Tanks	1 2 8	CSR-MWFS-054	Y50-37-10-018 Y50-37-10-010 Y52-37-10-002 Y52-37-10-001 JPA-EU-0008 JPA-CI-MWS-0001 Y50-37-98-661	Mop Water System Operations Automatic Floor Scrubber Automatic Floor Scrubber Raschig ring Cleaning Automatic Floor Scrubber Raschig ring Changeout Solution Bag Filter Changeout Solution Receipt from Building 9215 Transferring Solution From F-541 Tanks to F-501 Tanks
ROLLING AND FORMING					
O-Wing Ventilation	Later				
Forming	Later				
Rolling	Later				
Shear Phase	Later				

*This table provides information available as of August 1, 1997. The table will not be updated in the POA. Complete and revised information will be available prior to the ORR.

** 50 - System Operating Procedure
52 - Surveillance Procedure
56 - Abnormal Operating Procedure
57 - Alarm Response Procedure
70 - Health Safety,
JPA - Job Performance Aid

Table A1. Phase "A" Processes*

Process	Major Equipment	Restrictions	CSR	Operating Procedures	Title
UTILITIES					
Utilities	Steam	Misc			
	Sanitary water	Misc			
	Process water	Misc			
	Plant air	Misc			
	Natural gas	Misc			
	Nitrogen	Misc			
	Argon	Misc			
	Oxygen	Misc			
	Instrument air	Misc			
	Electrical switchgear	Misc			
	Electrical load centers	Misc			
	Process drain	Misc			
	Steam Condensate	Misc			
	Demineralized water	Tanks			
	Tower water	Cooling towers			
	Drains	Misc			
	Breathing air	Stations			

*This table provides information available as of August 1, 1997. The table will not be updated in the POA. Complete and revised information will be available prior to the ORR.

- Y/MA-7255, "The Operational Safety Requirements for Building 9212 Enriched Uranium Operations Complex"
- Y/MA-7291, "The Operational Safety Requirements for Building 9215 Complex - Enriched Uranium Operations"
- Process Criticality Safety Requirements: Listed by process in Table A1.

CO-2 "The safety documentation characterizes hazards and risks and identifies mitigating measures to protect worker and public safety from the characterized hazards." (CR-4)

Safety documentation is discussed under CO-1.

CO-3 "Safety systems are defined in the facility safety documentation." (CR-4)

Structures, systems, and components (SSC) credited for facility safety are identified in Section 2.6 of the BIOs.

CO-4 "There are adequate and correct safety limits for operating systems." (CR-1)

Safety limits are discussed in Section 2 of the OSRs.

CO-5 "Programs to control the design and modification of facilities and safety-related utility systems are in place." (CR-4)

This CO will be satisfied by having:

- the change control procedure approved,
- the change control procedure require that Unreviewed Safety Question Determinations (USQD) or USQD screenings work sheets be performed for changes in accordance with Y-12 and Enriched Uranium Operations (EUO) procedures,
- personnel trained on the change control procedure:
- structures, systems, and components (SSC) credited for facility safety identified in section 2.6 of each BIO, and
- modifications installed in accordance with the approved procedures.

The change control procedure is Y10-37-036, "Configuration Management - Change Control Process." Modifications are identified in EUO's Change Request database. There are no safety-related utility systems.

CO-6 "Facility systems, as affected by facility modifications, are consistent with the description of facility, procedures, and accident analysis included in the safety basis." (CR-15)

This CO will be satisfied by having the Phase A processes physically and functionally consistent with their descriptions in the BIOs, OSRs , and CSRs. Approved USQDs document how facility modifications are consistent with safety documentation. Modifications are identified in EUO's Change Request database.

CO-7 "There are adequate and correct procedures for operating systems and utility systems." (CR-1)

This CO will be satisfied for Phase A processes described in the safety documentation, by having:

- approved operating procedures, including job performance aids (JPAs), alarm response, abnormal, and emergency procedures; and
- the operating procedures accurately incorporate the requirements identified in the safety documentation (clarification: procedures are not the only documents that implement requirements);

The operating procedures approved as of August 1, 1997, are listed in Table A1 for planning information; a completed and revised listing will be available prior to the ORR.

CO-8 "Modifications to the facility have been reviewed for potential impacts on procedures and procedures have been revised to reflect these modifications." (CR-18)

This CO will be satisfied by having:

- change packages for approved modifications to Phase A processes require a review for impact on operating procedures, and
- a change control process is in place to ensure that future modifications are reviewed for impact on procedures.

Modifications are identified in EUO's Change Request database. The operating procedures approved as of August 1, 1997, are listed in Table A1 for planning information; a completed and revised listing will be available prior to the ORR.

CO-9 "Facility procedures, as affected by facility modifications, are consistent with the description of the facility, procedures, and accident analysis included in the safety basis." (CR-15)

This CO will be satisfied by having:

- Phase A operating procedures and other technical and administrative procedures consistent with descriptions in the safety documentation,
- a process in place to ensure procedure revisions are reviewed for consistency with the safety documentation, and
- procedures revised to reflect installed modifications.

The operating procedures approved as of August 1, 1997, are listed in Table A1 for planning information; a completed and revised listing will be available prior to the ORR.

Other procedures that control operations as described in the safety document are listed in Table A2 for planning information. Revised and complete information will be available during the ORR.

Modifications are identified in EUO's Change Request database.

CO-10 "A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, safety-related process systems, and safety-related utility systems." (CR-5)

This CO will be satisfied by having:

- Phase A SSC credited for facility safety inspected and tested prior to the ORR;
- surveillance procedures approved;
- surveillances specified in Section 3/4 of the OSRs current and future ones are scheduled;
- preventive maintenance and calibration required to keep the systems operable, as defined by OSRs, identified and scheduled in the appropriate preventive maintenance or calibration programs;
- the operations staff having a process to routinely inspect key parameters; and
- deficiencies identified and categorized, prestart deficiencies corrected, and systems confirmed to be operable after maintenance.

Table A2*	
Selected EUO Procedures other than Operating Procedures	
Y10-37-009	System Alignment Checklist Development, Revision, Control, and Use
Y10-37-021	Administrative Lock and Key
Y10-37-032	Job Performance Aids (JPAs)
Y10-37-035	Plan of the Day
Y10-37-036	Configuration Management - Change Control Process
Y10-37-037	Enriched Uranium Operations Document Control
Y10-37-040	Turnover of Processes, Systems, or Equipment to Enriched Uranium Operations
Y10-37-EU-005	Operations Shift Turnover and Work Station Relief
Y10-37-EU-010	Equipment Status
Y10-37-EU-022	Deficient Condition Identification
Y40-37-002	Response to Loss of Utility Services
Y50-37-031	Movement of Samples Between EUO and ASO
Y70-37-006	General Nuclear Criticality Safety Requirements for EUO Chemical Areas
Selected Y12 Procedures	
Y10-003	Plant Public Address (PA) System
Y10-007	Procurement of Material
Y10-027	Conduct of Training Procedure
Y10-039	Maintenance Recall Programs A, B, and C
Y10-059	Selection of Packaging
Y10-095	Requirements for Category A and Category B Packaging Components
Y10-096	Requirements for Category C Packaging Components
Y10-097	Use of Type B Packaging
Y10-098	Use of Type A Packaging
Y10-099	Use of DOT Authorized Packaging
Y10-100	Use of DOT 6M2R Packaging
Y10-102	Technical Procedure Process Control
Y10-153	Temporary Modification Control
Y10-158	Y-12 Compliance Assurance Program
Y10-174	Configuration Management of Fire Protection System
Y10-182	Development of Requests for Approval/Implementation Plans
Y10-192	Occurrence Reporting
Y10-194	Preventive Maintenance Program
Y10-197	Work Control for the Criticality Accident Alarm (CAAS) and Fire Protection (FP) Systems
Y10-198	Authorization Basis Update Preparation, Review, Approval, and Issuance
Y40-001	Reporting and Emergency
Y40-002	Personnel Evacuation
Y40-003	Response of Plant Emergency Personnel
Y40-004	Personnel Emergency Accountability
Y40-010	Emergency Notification and Occurrence Reporting
Y40-020	Fire Detection Alarm, and/or Fire Suppression system Outages: Compensatory Measures
Y40-027	Organization Emergency Management Program
Y40-100	Management of an Emergency Criticality
Y70-043	Job Hazard Analysis
Y70-100	Y-12 Plant Radiological Control Program
Y70-101	Transfer and Management for Radiological Control
Y70-117	Posting and Entry Control
Y70-122	Radiological Work Permit
Y70-134	Plant ALARA Program for Radiological Protection
Y70-150	Nuclear Criticality Safety Program
Y70-151	Criticality Accident Alarm System
Y10-190	New Activity Start-up Requirements
Y70-250	Fire Protection and Suppression
Y70-800	Safety Analysis and Review System
Y70-809	Unreviewed Safety Question Determination

*This table is for planning information. This table will not be updated in the POA. Revised and complete information will be available during the ORR.

SSC credited for facility safety are identified in section 2.6 of each BIO. There are no safety-related utility systems.

The surveillance procedures approved as of August 1, 1997, are included in Table A1 for planning information; a completed and revised listing will be available prior to the ORR.

CO-11 "Safety systems and other instruments which monitor Technical Safety Requirements are monitored for calibration." (CR-5)

This CO will be satisfied by having:

- surveillances specified in Section 3/4 of the OSRs performed as scheduled;
- instruments that monitor OSR requirements calibrated at the time of use.

CO-12 "All safety and safety-related utility systems are currently operational and in a satisfactory condition." (CR-5)

Systems credited for facility safety in Section 2.6 of each BIO will be operable as defined in the OSR. There are no safety-related utility systems.

CO-13 "Training and Qualification programs for operations personnel have been established, documented, and implemented that cover the range of duties required to be performed." (CR-2)

This CO will be satisfied, for the operations personnel whose actions or decisions may directly impact the safety envelope, by having training and qualification requirements documented in an EUO training and qualification program description. Operations positions that require qualification are identified in Appendix 4 of Y/GA-66/R6, "Y-12 Plant Training Implementation Matrix for DOE 5480.20A Standards/Requirements Identification Document." Table A3 is extracted from Y/GA-66/R6.

Table A3 EUO positions for Category II Facilities: 9212 and 9215	
Fissionable Material Handlers (FMH) Chemical Operator	**FMH Supervisors** Chemical Operator Supervisor
Managers Organization Manager Shift Manager Production Manager Operations Manager Training Manager Configuration Management Manager Work Control Manager Maintenance Manager Programs Manager Safety Basis Manager Design Engineering Manager Process Engineering Manager Procedures Manager	**Maintenance Personnel** Maintenance Coordinator Oiler **Technical Staff** Shift Technical Advisor Process Engineer Safety Basis Engineer Design Engineer
Operators Chemical Operator (Non-FMH) Material Controller Material Clerk SNM Vehicle Driver Machinist Machine Cleaner	**Supervisors** Material Handling Supervisor Machinist Supervisor
Training Personnel Training Instructor	

CO-14 "Technical qualifications of contractor personnel responsible for facility operations are adequate." (CR-19)

This CO will be satisfied by having:

- for the operations personnel whose actions or decisions may directly impact the safety envelope, technical qualification requirements that satisfy DOE Order 5480.20A, "Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities," documented in an EUO training and qualification program description; and
- records showing that the incumbents meet the requirements or that an approved compensatory action is in place.

Operations positions that require qualification are identified in Appendix 4 of Y/GA-66/R6, "Y-12 Plant Training Implementation Matrix for DOE 5480.20A Standards/Requirements Identification Document." Table A3 is extracted from Y/GA-66/R6. Other positions with direct responsibility for facility operations are the EUO organization manager and the nuclear operations manager.

CO-15 "Modifications to the facility have been reviewed for potential impacts on training and qualification." (CR-18)

This CO will be satisfied by having:

- training materials and activities consistent with equipment and operating procedures for SSC credited for facility safety in Section 2.6 of each BIO,
- change control packages for approved modifications are reviewed for impacts on procedures and related training as needed, and
- a process in place to ensure that training plans are reviewed when training is impacted by modifications.

Modifications are identified in EUO's Change Request database.

CO-16 "Training has been performed to the latest revision of procedures." (CR-18)

This CO will be satisfied by records showing that new or revised operating procedures have been reviewed for training implications and affected operations personnel have been trained, as required, before using a procedure. Training will be considered adequate if conducted in accordance with the "Nuclear Operations Conduct of Training Manual."

Operations positions requiring qualification are identified in Appendix 4 of Y/GA-66/R6, "Y-12 Plant Training Implementation Matrix for DOE 5480.20A Standards/Requirements Identification Document." Table A3 is extracted from Y/GA-66/R6. Operating procedures are identified in Table A1.

CO-17 "Level of knowledge of operations personnel is adequate based on reviews of examinations, exam results, selected interviews, and observation of work performance." (CR-3)

This CO will be satisfied by incumbent personnel having adequate knowledge of Phase A processes and requirements to safely fulfill their duties. Adequate knowledge means knowledge of the process fundamentals and operation; applicable requirements from OSRs, CSRs, operating procedures and JPAs; and required actions during off-normal events.

Operations positions that require specific knowledge are identified in Appendix 4 of Y/GA-66/R6, "Y-12 Plant Training Implementation Matrix for DOE 5480.20A Standards/Requirements Identification Document." Table A3 is extracted from Y/GA-66/R6.

CO-18 There are sufficient numbers of qualified personnel to support safe operations." (CR-13)

This CO will be satisfied by having:

- qualified personnel assigned to operations positions and duties, and
- qualified personnel available to fill positions defined in operating procedures. Both normal and off-normal conditions are included. Personnel may include LMES employees or subcontractors who supplement LMES personnel.

The numbers of personnel required to support safe operations and do initial production are established in the "9212 and 9215 Chemical and Metal Processing Minimum Staffing and Production Staffing Requirements" document approved by the EUO organization manager. These staffing levels exceed the minimum requirements established in section 6.3 of each BIO and section 5.4 of each OSR.

CO-19 "The implementation status for DOE-5480.19, "Conduct of Operations Requirements for DOE Facilities," is adequate for operations." (CR-12)

This CO will be satisfied by having:

- applicable programmatic elements in place as defined in the Y-12 "Nuclear Operations Conduct of Operations Manual,"
- records showing that personnel have been trained in key Conduct of Operations principles as defined in the manual; and
- weaknesses identified and corrective or compensatory actions in place.

Conduct of operations will be implemented as approved by DOE in Request for Approval (RFA) LMES/Y-12-DOE-5480.19-CSA-162.

CO-20 "Personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrate a high-priority commitment to comply with these requirements." (CR-14)

This CO will be satisfied by having operations and support personnel exhibit awareness of and commitment to applicable requirements from OSRs, CSRs, environmental permits, radiological work permit (RWP), and operating procedures while working in the operations area. Included are safety-significant requirements for normal and off-normal conditions and an understanding of the hazards and controls associated with the individual's own work.

CO-21 "An emergency drill program, including program records, has been established and implemented." (CR-9)

This CO will be satisfied by having:

- drills required by the EUO emergency drill program cover the hazards identified in the BIOs for Phase A processes,
- facility personnel trained on the emergency response program,
- scheduled drill(s) completed with satisfactory results, and
- deficiencies addressed (see CO-25).

CO-22 "A routine operations drill program, including program records, has been established and implemented." (CR-9)

This CO will be satisfied by having:

- a documented EUO operations drill program,
- credible scenarios involving Phase A processes identified,
- drills/exercises developed for these scenarios, and
- records showing that a representative sample of drills/exercises have been conducted with satisfactory results.

Drills/exercises will be conducted for credible accident scenarios for high-risk processes.

Table A4* Memorandums of Understanding and Landlord/Tenant Agreements	
MOU Number	**Title**
MOU-001	EUO // Analytical Services Organization Training
MOU-002	EUO // Development Organization Training
MOU-003	EUO // Depleted Uranium Operations Training
MOU-004	EUO // Facilities Management Organization Training
MOU-006	EUO // Nuclear Material Control and Accountability OrganizationTraining
MOU-007	EUO // Protective Services/Y-12 Fire Deparment Training
MOU-008	EUO (9212 & 9215) // Quality Organization Training
MOU-009	EUO // Radiological Control Organization (RADCON) Training
MOU-010	EUO // Site Shift Operations and Emergency Management Division Training
MOU-011	EUO // Y-12 Engineering Organization Training
MOU-012	EUO // Nuclear Criticality Safety Deparment STA Training
MOU-013	EUO 9212 Complex Operations Manager // EUO Maintenance Restart Manager Maintenance Work Packages Originally MOU-9212-96-001
MOU-014	EUO // Quality Organization, Radiological Control Organization, Design Engineering Organization, and Facilities Management Organization Work Action (WAC)
MOU-015	EUO // Facilities Management Organization (FMO) Maintenance Backlog
MOU-016	EUO // Design Engineering and Facilities Management Organization Configuration Management Screening of MJRs
MOU-017	EUO // Nuclear Criticality Safety Deparment (NCSD) Implementation of CSA 18473 (Designator C1-85)
MOU-018	Building 9212 Operations Complex // Analytical Services Organizaiton Landlord/Tenant Agreement Conduct of Operations
MOU-019	Building 9212 Operations Area // Metalworking Operations Landlord/Tenant Agreement Conduct of Operations
MOU-020	Building 9212 Operations Area // Quality Organization Landlord/Tenant Agreement Conduct of Operations
MOU-021	Building 9215 Operations Complex // Analytical Services Organization Landlord/Tenant Agreement Conduct of Operations
MOU-022	Building 9215 Operations Complex // Depleted Uranium Operations Organization Landlord/Tenant Agreement Conduct of Operations

*This table is for planning information. This information will not be updated in the POA. Revised and complete information will be available during the ORR.

Table A4* Memorandums of Understanding and Landlord/Tenant Agreements	
MOU Number	**Title**
MOU-023	Building 9215 Operations Complex // Development Organization Landlord/Tenant Agreement Conduct of Operations
MOU-024	Building 9215 Operations Management // FMO-Power Operations Department Landlord/Tenant Agreement Conduct of Operations
MOU-025	Building 9215 Operations Management // FMO-Utilities Department Landlord/Tenant Agreement Conduct of Operations
MOU-026	Building 9215 Operations Management // Nuclear Criticality Safety Department Landlord/Tenant Agreement Conduct of Operations
MOU-027	Building 9215 Operations Management // Plant Shift Superintendent (PSS) Department Landlord/Tenant Agreement Conduct of Operations
MOU-028	Building 9215 Operations Complex // Quality Organization Landlord/Tenant Agreement Conduct of Operations
MOU-029	Building 9215 Operations Management // Radiological Controls Department Landlord/Tenant Agreement Conduct of Operations
MOU-030	EUO // Fire Protection Engineering Department, Fire Systems Engineering, and Fire Department Operation Conduct of Operations
MOU-031	EUO // Occupational Safety and Health (OSH) Organization Conduct of Operations
MOU-032	EUO // Facilities Management Organization (FMO) Conduct of Operations
MOU-033	EUO // Nuclear Criticality Safety Department Conduct of Operations
MOU-034	EUO // Site Operations Center Conduct of Operations
MOU-035	EUO // Product Certification Organization Conduct of Operations
MOU-036	EUO // Nuclear Materials Control and Accountability Conduct of Operations
MOU-038	EUO // Facilities Management Organization (FMO) Utilities Conduct of Operations
MOU-040	EUO // Central Engineering Configuration Management
MOU-041	EUO // Criticality Accident Alarm System Organization (CAAS) Configuration Management
MOU-042	EUO // Depleted Uranium Operations Configuration Management
MOU-043	EUO // Facilities Management Organization Configuration Management

*This table is for planning information. This information will not be updated in the POA. Revised and complete information will be available during the ORR.

Table A4* Memorandums of Understanding and Landlord/Tenant Agreements	
MOU Number	**Title**
MOU-044	EUO // Product Certification Organization Configuration Management
MOU-045	EUO // Radiological Control (RADCON) Configuration Management
MOU-046	EUO // Y-12 Energy Systems Waste Management Organization (ESWMO) Configuration Management
MOU-047	EUO // Y-12 Fire Protection Operations Configuration Management
MOU-048	EUO // NCSD Training
MOU-049	EUO // Facilities Management Organization (FMO) Utilities Training
*This table is for planning information. This information will not be updated in the POA. Revised and complete information will be available during the ORR.	

CO-25 "A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor." (CR-6)

This CO will be satisfied by having:

- formally established deficiency identification and handling processes and responsibilities;
- the processes understood by responsible operations personnel;
- identified health and safety deficiencies and issues that apply to Phase A processes categorized as pre- or post-start;
- pre-start deficiencies corrected or on schedule for closure before restart; and
- post-start deficiencies tracked for closure.

The deficiency-handling tools are the Energy Systems Action Management System (ESAMS) and the EUO deficiency report process.

CO-26 "A systematic review of the facility's conformance to applicable DOE orders has been performed." (CR-7)

This CO will be satisfied by assessing compliance with Y-12 programs that implement applicable standards/requirements identification documents (S/RIDs) in the following functional areas:

Management Systems
Quality Assurance
Configuration Management
Training and Qualification
Emergency Management
Engineering
Construction
Operation
Maintenance
Radiation Protection
Fire Protection
Packaging and Transportation
Waste Management
Facility (Nuclear) Safety
Occupational Safety and Health
Environmental Protection

The Y-12 Compliance Assurance Program is designed to ensure that applicable order requirements are incorporated into S/RIDS and that applicable S/RIDs are incorporated into Y-12 programs. The Y-12 Compliance Assurance Program will be considered adequate if corrective actions are being implemented as approved by DOE in Request for Approval LMES/Y-12-ORIG-1300.X1A-CSA-130, "Configuration Management on Standards/Requirements Identification Documents." The review of compliance actions that are the responsibility of support organizations will be limited to work performed in the restart area. An existing RFA for a DOE order, submitted to DOE in accordance with Y-12 procedures, will be considered evidence that an assessment has been performed; and noncompliances are being tracked.

CO-27 "Non-conformances to applicable DOE Orders have been justified, and schedules for gaining compliance have been justified in writing and formally approved." (CR-7)

This CO will be satisfied by having order noncompliances identified in the compliance assessment (CO-26) corrected or by having RFAs approved by DOE

CO-28 "An adequate startup or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators." (CR-10)

This CO will be satisfied by having:

- a formal plan to ensure smooth transition from restart to routine operations and
- the plan providing monitoring and control when Phase A processes are initially used for production or normal operation.

The initial use will demonstrate that qualified personnel can operate the equipment within the applicable safety limits using the new or revised operating procedures or JPAs.

CO-29 "A program is established to promote a site-wide safety culture." (CR-14)

This CO will be satisfied by having:

- management establish and communicate a commitment to safety and environmental compliance;
- safety problems reported, prioritized, and tracked in a deficiency tracking system such as the EUO deficiency report system; and
- personnel working in EUO exhibit awareness of and concern for safety and environmental compliance during interviews and performance of activities.

CO-34 "Management programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure support services are adequate for operations." (CR-8)

This CO will be satisfied by having:

- the management programs identified in Section 5.8 of the OSRs are in place as far as they apply directly to the Phase A processes and activities,
- environmental permit compliance programs that were maintained during the stand down,
- the personnel specified in program documents assigned, and
- facilities and equipment specified in program implementing documents.

Environmental compliance is maintained through permits. Compliance is monitored by Y-12 and by outside agencies.

Management programs identified in section 5.8 of the 9212 OSR are:

- Radiation Control
- USQD
- Criticality Safety
- Fire Protection
- Occupational Safety and Health
- Radiation and Hazardous Waste Management
- Training
- Document Control
- Maintenance
- Conduct of Operations
- Configuration Management
- Quality Assurance
- Initial Testing and In-Service Surveillance
- Emergency Management
- Safety Analysis Review
- Occurrence Reporting

CO-35 "Training and Qualification programs for operation support personnel have been established, documented, and implemented that cover the range of duties to be performed." (CR-2)

This CO will be satisfied by having:

- area-specific requirements for support organization personnel established in procedures, Memorandums of Understanding, or landlord/tenant agreements;
- support organization documentation demonstrating that personnel working in the area meet the area-specific requirements;
- training and qualification programs consistent with the Y-90 series plant procedures;

Memorandums of Understanding and Landlord/Tenant agreements in place as of August 1, 1997, are listed in Table A4 for planning information. Revised and complete information will be available during the ORR.

Support personnel positions that require qualification are identified in Appendix 4 of Y/GA-66/R6, "Y-12 Plant Training Implementation Matrix for DOE 5480.20A Standards/Requirements Identification Document." Table A5 is extracted from Y/GA-66/R6.

CO-36 "Level of knowledge of operations support personnel is adequate based on reviews of examinations, exam results, selected interviews, and observation of work practices." (CR-3)

This CO will be satisfied by having:

- area-specific requirements for support organization personnel established in procedures, Memorandums of Understanding, or landlord/tenant agreements;
- support organization documentation demonstrating that personnel working in the area meet the area-specific requirements;
- training and qualification programs consistent with the Y-90 series plant procedures;

Memorandums of Understanding and Landlord/Tenant agreements that are in place as of August 1, 1997, are listed in Table A4 for planning information. Revised and complete information will be available during the ORR.

Support personnel positions that require qualifications are identified in Appendix 4 of Y/GA-66/R6, "Y-12 Plant Training Implementation Matrix for DOE 5480.20A Standards/Requirements Identification Document." Table A5 is extracted from Y/GA-66/R6.

A3 Prerequisites

Prerequisites that must be completed prior to beginning the Phase A LMES ORR are:

Prerequisite PR-1: The Building 9212 and Building 9215 BIOs and OSRs must be approved and implemented in accordance with approved implementation plans. CSRs must be approved and incorporated into operating documents (applies to COs 1, 2, 3, 4, 9, 10, 11, 12, and 34).

Prerequisite PR-2: Change control and document control procedures must be issued and in use. The change control procedure must ensure that modifications satisfy design requirements; that USQDs are made as required; and that procedures and training are revised, as appropriate. A document control process must ensure that documents used for decisions affecting safety are current and accurate (applies to COs 5, 6, 7, 8, 9, 15, and 34).

Table A5 Support organizations positions for Category II Facilities: 9212 and 9215

Managers
Product Certification Organization
- Organization Manager
- Physical Testing Department Manager
- Dimensional Metrology Department Manager
- Training Manager

Facilities Management Organization
- Manager
- Training Manager

Facility Safety Department
- Facility Safety Department Manager

Nuclear Criticality Safety Organization
- Nuclear Criticality Safety Manager

Protective Services
- Fire Operations Manager
- Y-12 Fire Department Chief
- Fire Protection Engineer Supervisor

Site Management Services
- Site Shift Operations Manager

Maintenance Personnel
Facilities Management Organization
- Building Electrician
- Speciality Electrician
- Building Pipefitter
- Specialty Pipefitter
- Outside Machinist
- Building Maintenance Supervisor
- Specialty Maintenance Supervisor

Technicians/Supervisors
Analytical Services Organization
- Analytical Services Technician

Protective Services
- Fire Protection Inspector
- Fire Officer Supervisor

Product Certification Organization
- Radiographer
- Radiographer/Dye Penetrant Supervisor
- Dimensional Inspector
- Dimensional Inspector Supervisor

Radiological Controls Organization
- Radiological Control Technician
- Radiological Control Technician Supervisor

Training Personnel
Product Certification Organization
- Training Instructor

Protective Services
- Fire Training Instructor

Radiological Controls Organization
- Training Instructor

Technical Staff
Analytical Services Organization
- Chemist

Nuclear Criticality Safety Organization
- Nuclear Criticality Safety Engineer
- Nuclear Criticality Safety Technical Specialist

Site Management Services
- Plant Shift Superintendent
- Systems Manager

Product Certification Organization
- Engineering Support

Protective Services
- Fire Protection Engineer

Facilities Management Organization
- Maintenance Engineer
- Staff Engineer

Radiological Controls Organization
- Radiological Engineer (Operations)

Prerequisite PR-3: Phase A process modifications must be identified in the EUO Change Request database (applies to COs 6, 8, 9, and 15).

Prerequisite PR-4: For each Phase A process the following must be complete: essential modifications and maintenance, process drawings, process procedures or JPAs, CSRs, scheduled OSR surveillances, inspection and testing, and scheduled maintenance and calibration (applies to COs 6, 7, 8, 9, 10, 11, 12, 28, and 34).

Prerequisite PR-5: Conduct of Operations practices must be implemented in accordance with the "Nuclear Operations Conduct of Operations Manual" as stated in RFA LMES/Y-12-DOE-5480.19-CSA-162 (applies to COs 10, 11, 19, 20, 24, and 34).

Prerequisite PR-6: Training and qualification requirements must be identified for key operations and support positions. Personnel assigned to positions must be trained and qualified to meet applicable requirements. Alternately, compensatory measures must be in place to support the personnel (applies to COs 13, 14, 15, 17, 18, 20, 23, 28, and 34).

Prerequisite PR-7: Drills and/or exercises must be developed for credible accident scenarios for high-risk processes. Emergency management plans must address hazards as defined in the BIOs. A representative sample of drills/exercises must be conducted with satisfactory results for these scenarios (applies to COs 21, 22, and 34).

Prerequisite PR-8: Operations and support personnel must be trained and qualified to perform assigned tasks (applies to COs 16, 17, 34, 35, and 36).

Prerequisite PR-9: The operating organization must be in place and key positions must be staffed to or above minimum levels established in the BIO or OSR. Interfaces with tenant and support organizations must be documented and communicated (applies to COs 18, 24, and 34).

Prerequisite PR-10: The ESAMS and EUO deficiency report process must be in place. Open deficiencies and issues must be entered into the appropriate system for tracking and closure. Pre-start deficiencies must be identified and closed, with the exception of a manageable list of findings that have a well-defined schedule for closure before restart (applies to CO 25, 29, and 34).

Prerequisite PR-11: An assessment of compliance with administrative controls for the S/RID functional areas of interest must be completed. Results must be evaluated and placed in the appropriate deficiency tracking system. RFAs must be approved by DOE for noncompliances with DOE orders important to health and safety (applies to COs 26, 27, and 34).

Prerequisite PR-12: A start-up plan defining process start-up controls during the initial use of enriched uranium in restarted processes must be developed and approved (applies to CO 28).

Prerequisite PR-13: Line management must clearly communicate to all personnel a commitment to safety and environmental compliance (applies to CO 29).

Prerequisite PR-14: A MSA must be performed to assess readiness for the LMES ORR. The MSA must verify that these prerequisites are complete and that the facility is ready for the LMES ORR. Deficiencies must be evaluated and corrective actions must be approved (applies to all COs applicable to the Phase A ORRs).

Prerequisite PR-15: The Vice President for Restart Operations must certify that readiness has been achieved (applies to all COs applicable to the Phase A ORRs).

Prerequisite PR-16 (Phase A2 only): The Phase A1 LMES ORR must be completed and pre-start findings must be reviewed for impact on Phase A2 processes.

Appendix B
Team Leader Qualification Summary

Name: Joseph P. Flynn

Objectives Assigned: Operational Readiness Review Team Leader

Summary of Technical Qualifications

- Electrical Engineering, Purdue University Honors Program
- United States Navy Nuclear Power Program (six years)
- Commercial Nuclear Plant Experience

  - Engineering
  - Maintenance Manager
  - Senior Reactor Operator
  - Operations Manager
  - Technical Manager
  - Assistant Plant Manager

- Institute of Nuclear Power Operations (INPO)

  - Maintenance Department Assistant Manager
  - Operations Department Manager
  - Developed "Guidelines for the Conduct of Operations at Nuclear Power Stations"
  - Events Analysis Department Manager
  - Technical Development Department Manager
  - Plant and Corporate Evaluation Team Manager (more than 20 evaluations)

- Consultant in Areas of Operations and Maintenance

- Manager of Lockheed Martin Energy Systems (LMES) Evaluations Program

Summary of Assessment/ORR Qualifications

- See INPO experience
- Participated in 13 LMES evaluations group evaluations as a consultant to the team manager
- Led LMES readiness assessment teams for Depleted Uranium Operations, Disassembly/Assembly Operations, and Quality Evaluation activities
- Completed LMES Operational Readiness Review training
- Completed Management Oversight and Risk Tree training

Summary of Facility Familiarization

- Participated in LMES evaluations group evaluations of the Y-12 Plant

Basis for Acceptable Independence

- Reports to the Vice President, Defense and Manufacturing
- Independent of the Enriched Uranium Operations Resumption Organization